



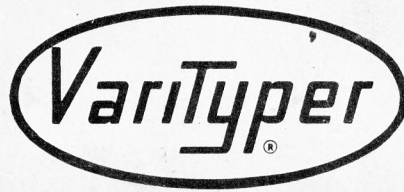
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MYRON MANUFACTURING CORP.

61 West Hunter Avenue

Maywood, N. J. 07607





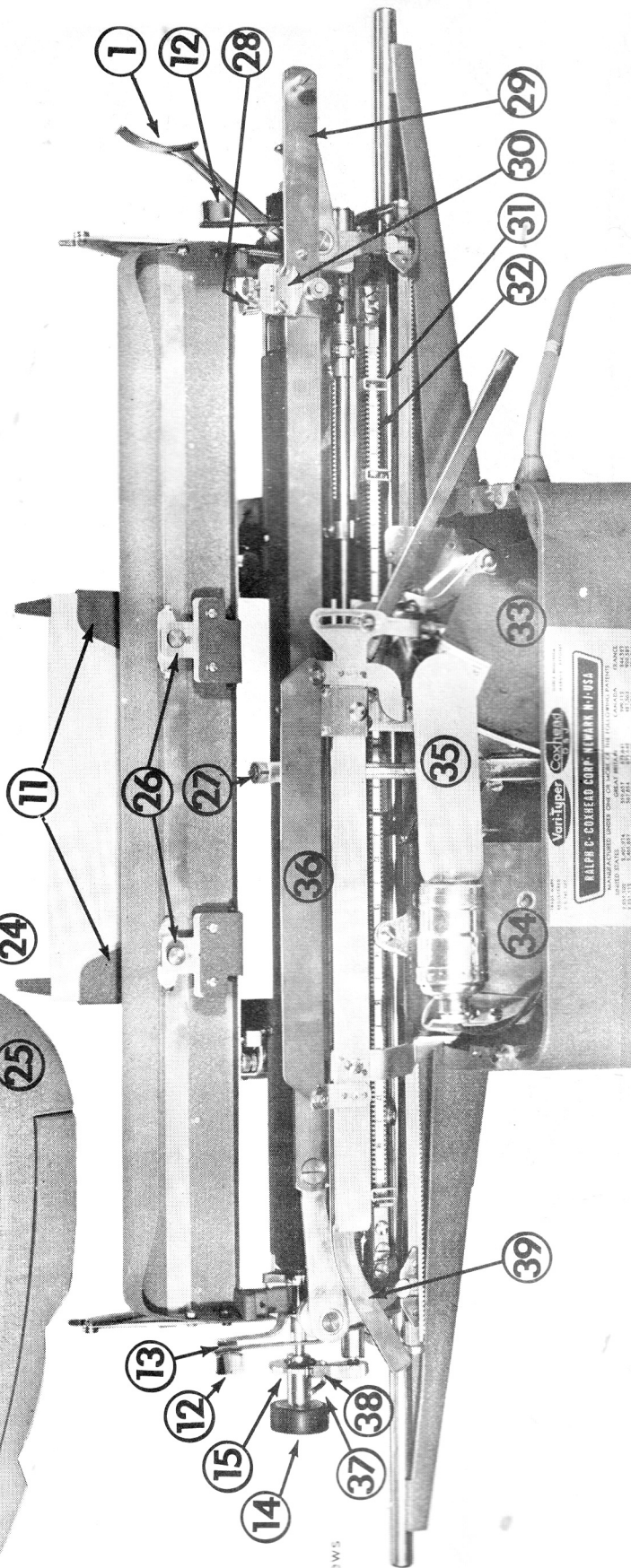
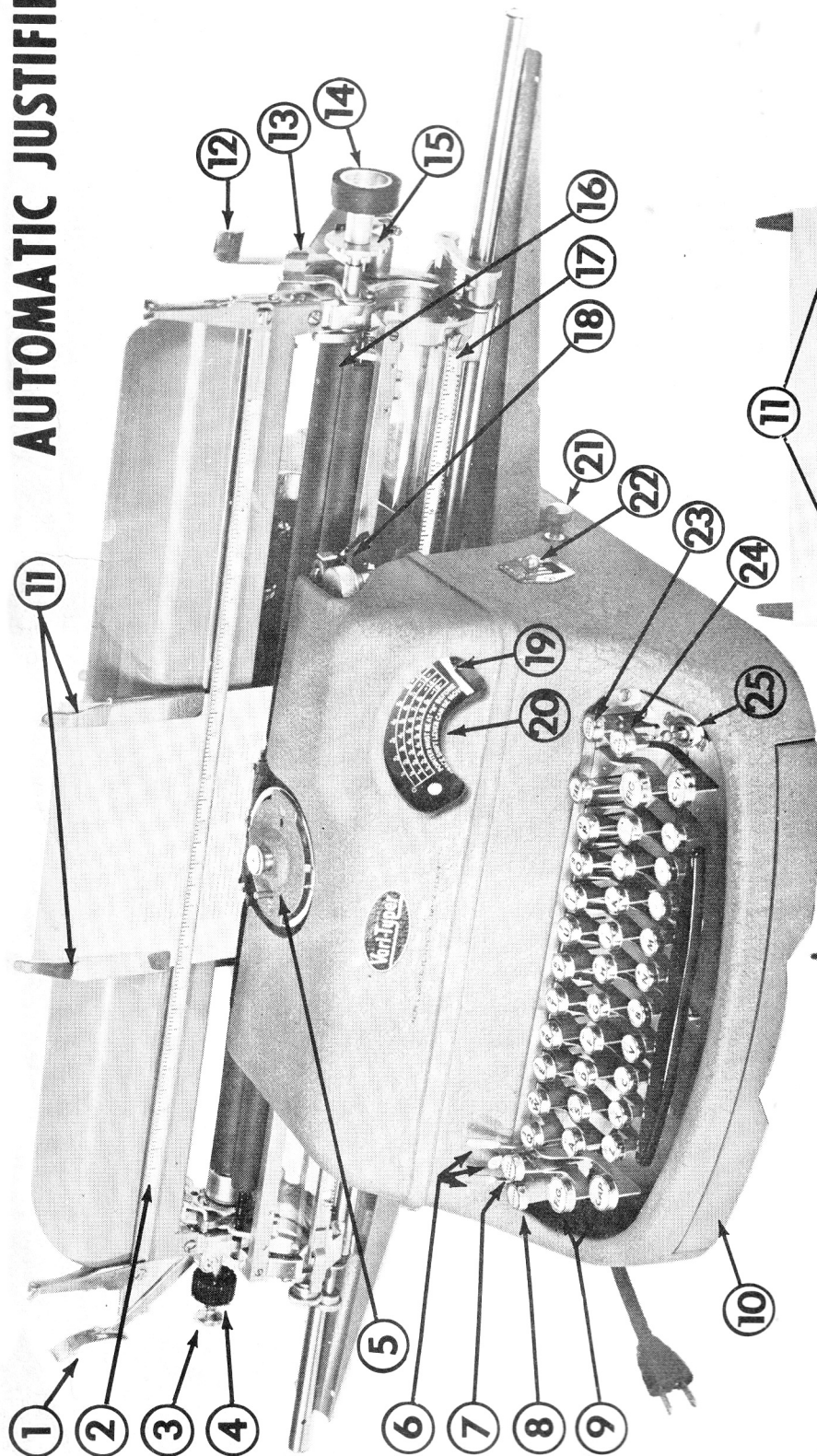
STANDARD MODEL VARITYPER MACHINES
OPERATOR INSTRUCTIONS

VARITYPER CORPORATION • 720 FRELINGHUYSEN AVENUE • NEWARK 14, NEW JERSEY

SUBSIDIARY OF ADDRESSOGRAPH-MULTIGRAPH CORPORATION

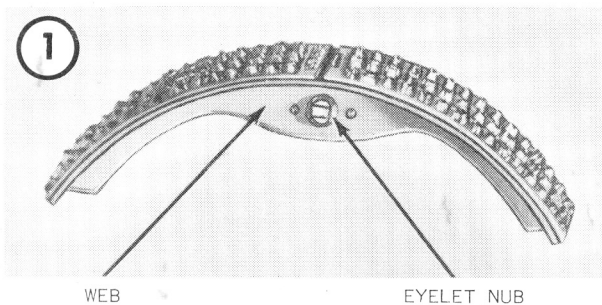
AUTOMATIC JUSTIFIER MODEL - A-20

1. Line Feed Lever
2. Alignment Scale
3. Line Space Release Pin
4. Feed Roll Knob
5. Anvil
6. Lock Release Levers
7. Type Change Key
8. Repeat Key
9. Cap & Fig Keys
10. Type Drawer
11. Paper Guides
12. Carriage Release Lever
13. Feed Roll Release Lever
14. Feed Roll Knob
15. Vari-Line Gear
16. Feed Rolls
17. Marginal Scale
18. Carbon Ribbon Feed
19. Dial Pointer
20. Dial Scale
21. Ribbon Control Knob
22. Horizontal Spacing Lever
23. Half Back Space Key
24. Back Space Key
25. Shadow Light Switch

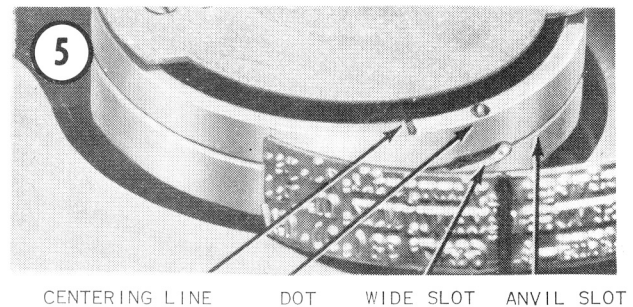


26. Paper Guide Thumb Screws
27. Hammer
28. Vertical Spacing Knob
29. Actuating Bar
30. Movable Trolley
31. Tabulator Stop
32. Tabulator Scale
33. Motor
34. Motor Box
35. Shadow Light
36. Character Scale
37. Detent Lever Spring
38. Detent Lever
39. Horizontal Track

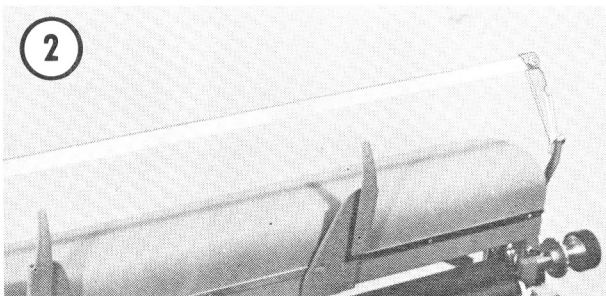
INSERTING THE TYPE FONT



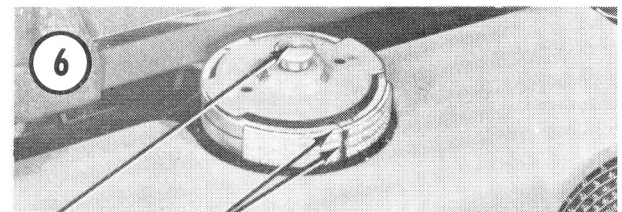
Vari-Typer type font showing web and eyelet nub. Eyelet nub protrusion is found on only one side of web, the *down* side.



Insert type so that eyelet enters wide slot at dot marking. (Center line of type lines up with dot on the anvil).

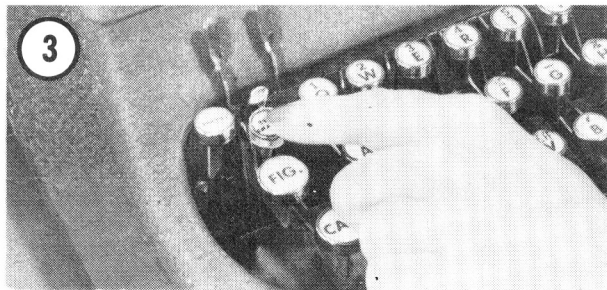


Place paper scale in upright position.

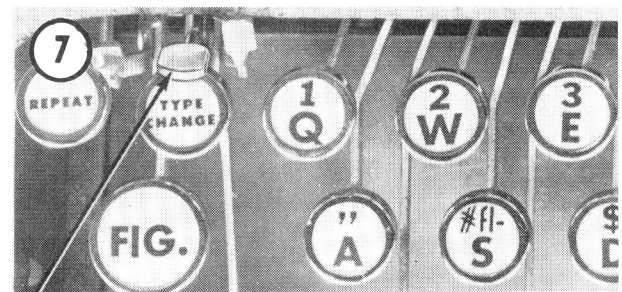


ANVIL KNOB ALIGNED

Slide the type font to the left until center line of the type is exactly aligned with the center line of the anvil.



Depress type change key. This will elevate and lock anvil for type insertion.

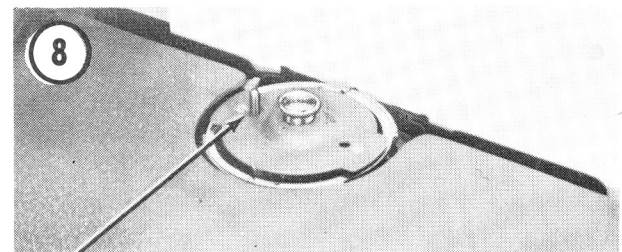


LOCK LEVER

Release type change key by pushing lock lever back.



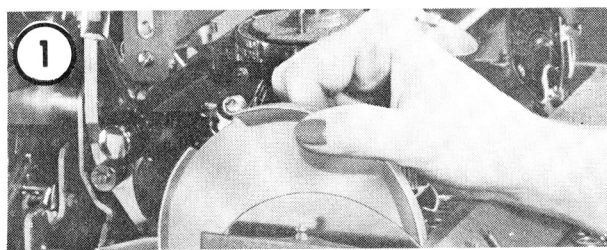
Hold type between thumb and forefinger with eyelet nub down.



ANVIL LOCATING PIN

Lift and turn anvil knob as far as it will go and release gently. When anvil locating pin appears on left side font is in printing position.

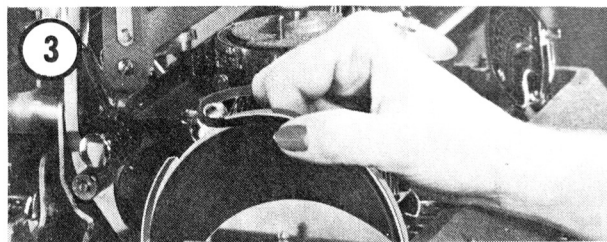
THE RIBBON AND RIBBON SHIELD



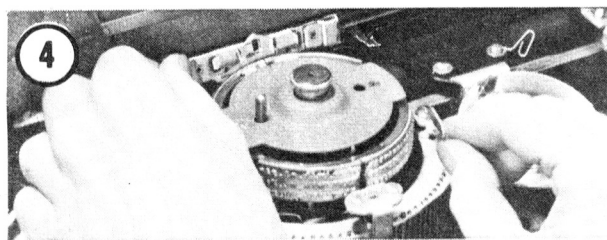
Pull carriage all the way to the right. Remove front cover by lifting up and towards you. The *ribbon cup* is located on left side of machine in vertical position and is removed by grasping its top end and lifting with a slight rotating motion.



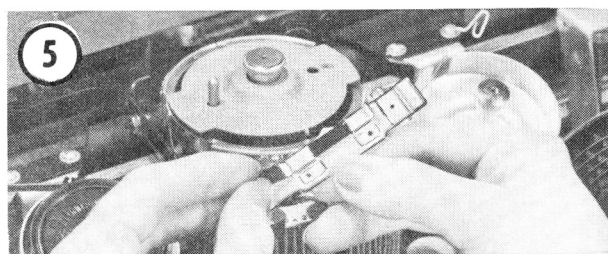
Turn the cup so that the spindle on which the ribbons turn is up. Place ribbon spool in cup, so that it turns *counterclockwise*.



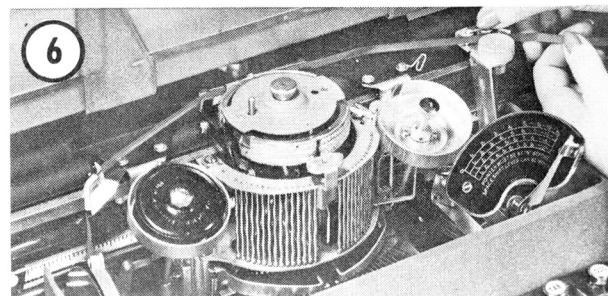
Replace ribbon cup. Make certain cup is down in machine as far as it will go. Cup is in proper operating position when ribbon pulls freely.



To remove ribbon shield from its holder, move holder control lever (located at the right of the shield holder) to the *left*. This squeezes prongs of shield holder together so shield can be removed. Lift shield off holder prongs.

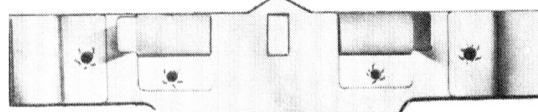


Hold shield with pointer up and the two ribbon slots facing you. Thread ribbon through guide. Then, holding ribbon with *carbon side away from you*, thread it through the ribbon slots.

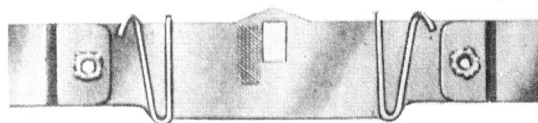


Replace shield by dropping each loop on holder prongs. Holder control lever should be to the *left* until shield has been replaced—then release by moving it slightly to *right*. Pull ribbon through guide on right side until it reaches two small feeder wheels. Push back smaller one and slip ribbon between them.

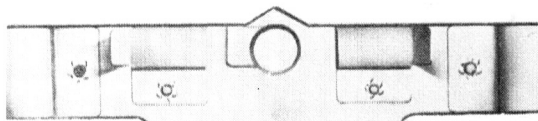
BASIC RIBBON SHIELDS



CARBON RIBBON - 6 AS 187

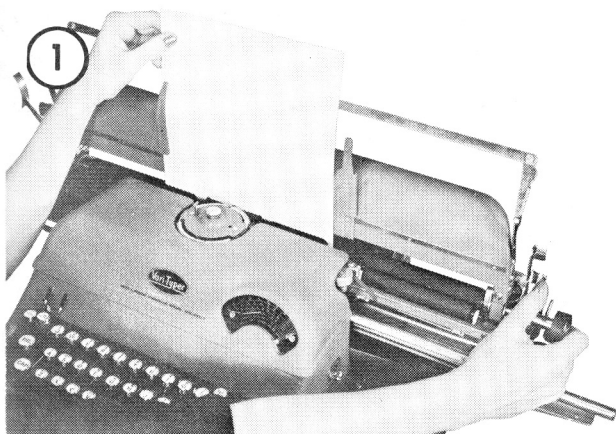


CLOTH RIBBON - 6 AS 127



SPIRIT DUPLICATORS & STENCILS - 6 AS 236

INSERTING PAPER OR MASTERS



The feed roll lever is located at right end of carriage. When pressed back, it separates feed rolls to permit insertion of paper or masters. *Paper Insertion.* Place paper between feed rolls in center of carriage. Drop paper to bottom of paper basket. Close feed rolls, (*Pull feed roll lever forward*) and roll paper down by turning feed roll knob.

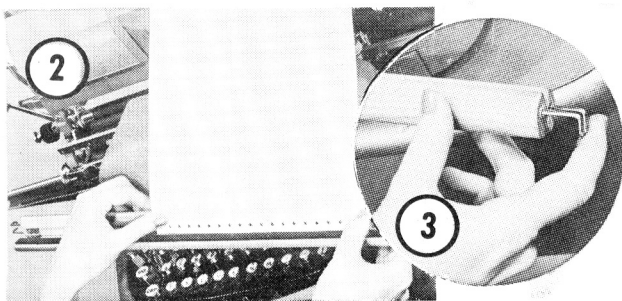
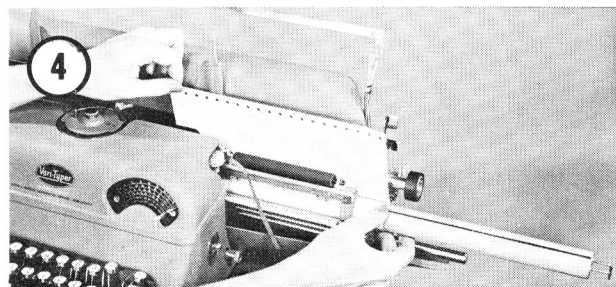
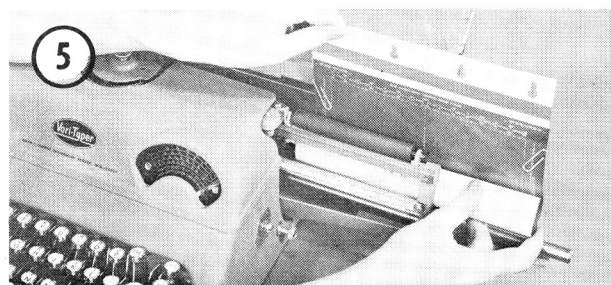


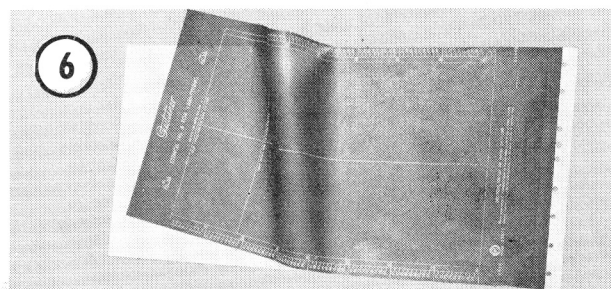
Plate Insertion. Open Split Roller by pulling out hook clamps at each end of roller. Place plate (*or paper*) in center of open roller. Close Split Roller and lock by pushing in hook clamp at each end of roller.



Roll plate around roller tightly and evenly. Allow two or three inches to extend at top. Holding top of plate with left hand, guide plate into feed rolls.



Stencil Insertion. Remove backing sheet. Place coated face of cushion sheet toward back of stencil. Attach with paper clips. Roll stencil in small cylindrical shape, allowing two or three inches to extend at top. Holding top of stencil with left hand, guide stencil into feed rolls. Use *split roller* when inserting stencil lengthwise.

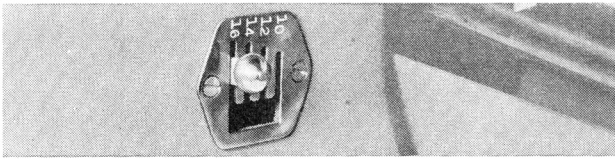


Inverted Stencil. This stencil is designed especially for Vari-Typer use. The closed end, which is used to fasten stencil to duplicator, is at bottom of stencil, and the cushion and backing sheets are attached to stencil. Remove backing sheet and drop stencil into basket. Close feed rolls and roll stencil down (*same as paper in Figure 2*).

Note. The main purpose of the split roller is to *control* the master copy, whether paper, plate, or stencil. Plates *always* require the use of the split roller. *Always turn split roller* (to take up slack in plate) *when rolling plate down in machine.* (This applies when making corrections as well as in the original insertion of plates).

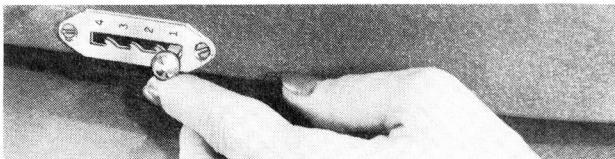
Alternate Method of Plate Insertion. Place split roller in machine with *open* jaws of roller up. Drop plate between feed rolls so that lower end of plate drops into open jaws of roller and lock two end clamps. Close feed rolls. Roll plate down in machine *turning split roller* (away from you) *to take up all slack in plate.*

BASIC SETTINGS

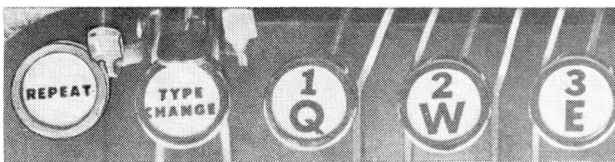


Horizontal Spacings. The lever illustrated above is on the right side of the Vari-Typer. The numerals for the setting indicate the number of characters composed per inch in a line of copy. Settings for proper spacing are recommended in the Type Catalog.

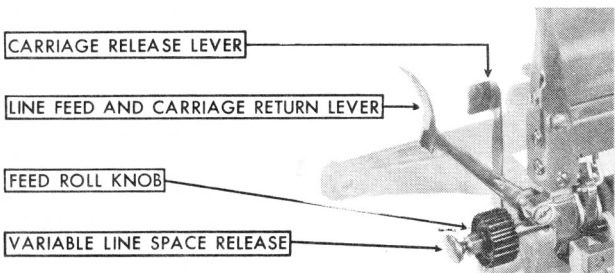
Setting at No. 10	mmmmmmmm
Setting at No. 12	mmmmmmmm
Setting at No. 14	mmmmmmmm
Setting at No. 16	mmmmmmmm



Impression. Selection lever for degree of impression is located on the left side of the Vari-Typer. No. 1 setting is for Light, No. 2 for Medium Light, No. 3 for Medium Heavy and No. 4 for Heavy. Heavy types require heavy impression and the opposite for light faces. Duplicating masters will also require varying degrees of impression, stencils requiring heavy impression and paper or litho-plates requiring lighter impression.



Repeat Key. Large heading types and extra bold faces may require impressions heavier than the lever settings indicate. The repeat key permits extra hammer blows to register the correct impression. Simply depress and hold the character key while using the 'Repeat' key in repeat action to obtain the necessary impression.



Vertical Spacing. Five standard vertical spacings are available on the Vari-Typer, 9, 6, $4\frac{1}{2}$, $3\frac{3}{5}$ and 3 lines per inch. Turn the feed roll knob slowly and you will hear and feel 'clicks'. Eighteen of these clicks equal one vertical inch of copy. Thus, 2 clicks between lines of copy provide 9 lines of copy in a vertical inch; 3 clicks, 6 lines per inch; etc.

This is typed at 9 lines to the vertical inch; there are 2 clicks between lines.

This is typed at 6 lines to the vertical inch; there are 3 clicks between lines.

This is typed at $4\frac{1}{2}$ lines to the vertical inch; there are 4 clicks between lines.

This is typed at $3\frac{3}{5}$ lines to the vertical inch; there are 5 clicks between lines.

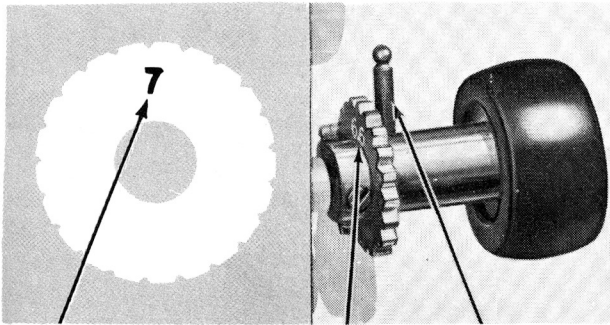
This is typed at 3 lines to the vertical inch; there are 6 clicks between lines.

Line Feed Lever. The line feed lever at left end of carriage spaces copy at any of the five vertical spacings. Move the chrome-plated knob (at left rear of carriage *behind* paper table) to the desired notch:

1	2 clicks - 9 lines
2	3 clicks - 6 lines
3	4 clicks - $4\frac{1}{2}$ lines
4	5 clicks - $3\frac{3}{5}$ lines
5	6 clicks - 3 lines

Vari-Line Gears provide additional vertical spacings for Vari-Typed copy. These five gears located in type drawer of machine, have markings that indicate the number of lines per inch each gear provides -- 11, 10, 8, 7 and 6.6. The 10 gear, for example, will produce 10 lines per inch when turned one notch, or *click*, between lines.

BASIC SETTINGS (cont'd)



GEAR NUMBER

GEAR

DETENT LEVER

Installing the Vari-Line Gear. The gear is installed on the right end of carriage. Grasp left feed roll knob to hold feed roll rigid. Unscrew right feed roll knob and remove it from shaft. Behind shaft is a detent spring with roller at one end and a lever that controls the spring. Move the lever *back* and slide selected gear on shaft. Replace feed roll knob and screw it firmly into position. Push lever *down* (so it swings freely). This will drop roller into notch of gear. Pull out feed roll release pin at left end of carriage to disconnect standard spacings.

NOTE: *Leave the feed roll release pin out at all times while using Vari-Typer gears.* Feed roll knob will now operate the Vari-Line gear. To return to standard spacing, disengage Vari-Line gear by pushing spring lever back, and push in feed roll release pin. *If gear is disengaged,* it is not necessary to remove the gear while using standard spacing.

The gears are not limited to the spacings marked on them. Further variations may be obtained by turning the gear *two* notches between lines, etc. The Vari-Line spacings and their variations are listed below:

GEAR NUMBER	LINES PER INCH USING ONE NOTCH	LINES PER INCH USING TWO NOTCHES
No. 6.6	6.6	3.3
No. 7	7	3-1/2
No. 8	8	4
No. 10	10	5
No. 12	12	6*

*Standard spacing-Vari-Typer gear unnecessary

VARI-LINE GEAR SPACING CHART

TYPE NUMBER	LINES PER INCH
158	6.6
158H	6.6
158LL	6.6
170	5
180	10
180L	8
180LB	8
211	8
224-7	8
225-8	8
233	8
233-7	7
250-6	10
250-7	7
250-8	6.6
265	6.6
270	6.6
300-8	10
300-9	8
300-10	7
300-11	7
310-6	10
310-10	7
315-6	10
315-10	7
320-9	8
320-10	7
325-9	8
325-10	7
330-10	7
345-10	7
350 #2	10
350 #3	10
350 #4	7
350 #5	7
360-6	10
360-8	8
360-10	7
380-7	10
380-8	8
380-10	7
385-7	10
385-8	8
385-10	7

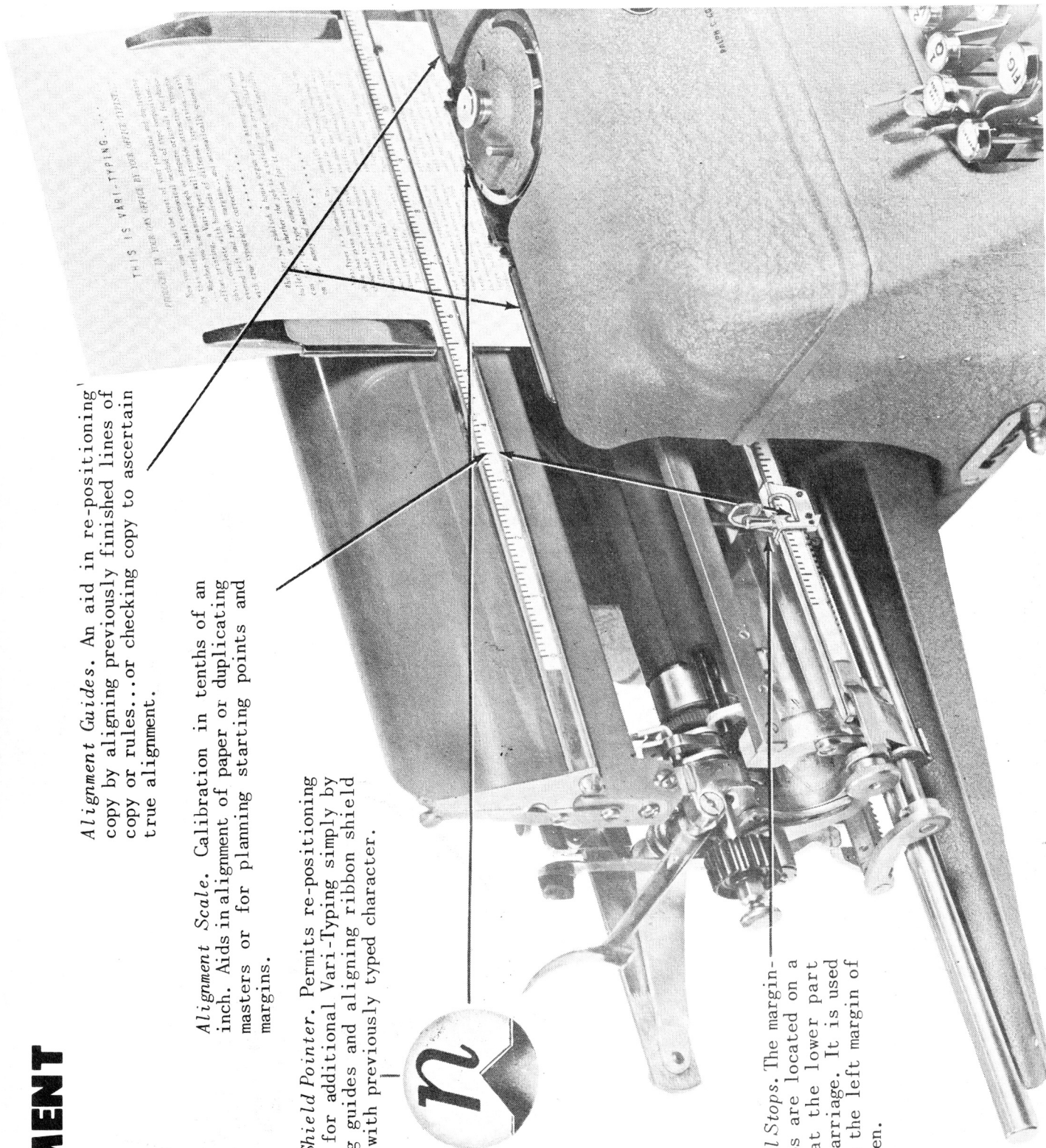
ALIGNMENT

Alignment Guides. An aid in re-positioning copy by aligning previously finished lines of copy or rules...or checking copy to ascertain true alignment.

Alignment Scale. Calibration in tenths of an inch. Aids in alignment of paper or duplicating masters or for planning starting points and margins.

Ribbon Shield Pointer. Permits re-positioning of copy for additional Vari-Typing simply by aligning guides and aligning ribbon shield pointer with previously typed character.

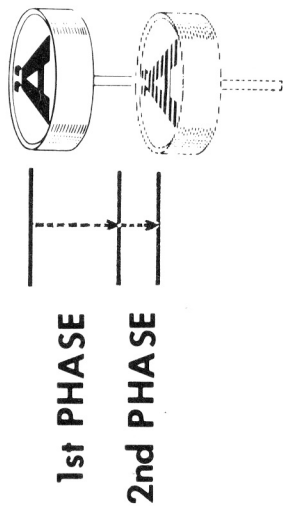
Marginal Stops. The marginal stops are located on a scale at the lower part of the carriage. It is used to keep the left margin of copy even.



TOUCH

The 'touch' in keyboard operation is a 'positive' one..that is..each key must be depressed completely or 'bottomed.' The key operation performs two functions. The first phase of its depression selects the character bringing it into imprinting position and the second phase trips the hammer mechanism for the actual impression. (See illustration). Fast, rhythmic typing can be quickly achieved after acquiring the 'follow-through' or 'bottoming' habit of keyboard operation. The operator will soon learn that steady pressure on each key rather than a staccato touch is the simple secret.

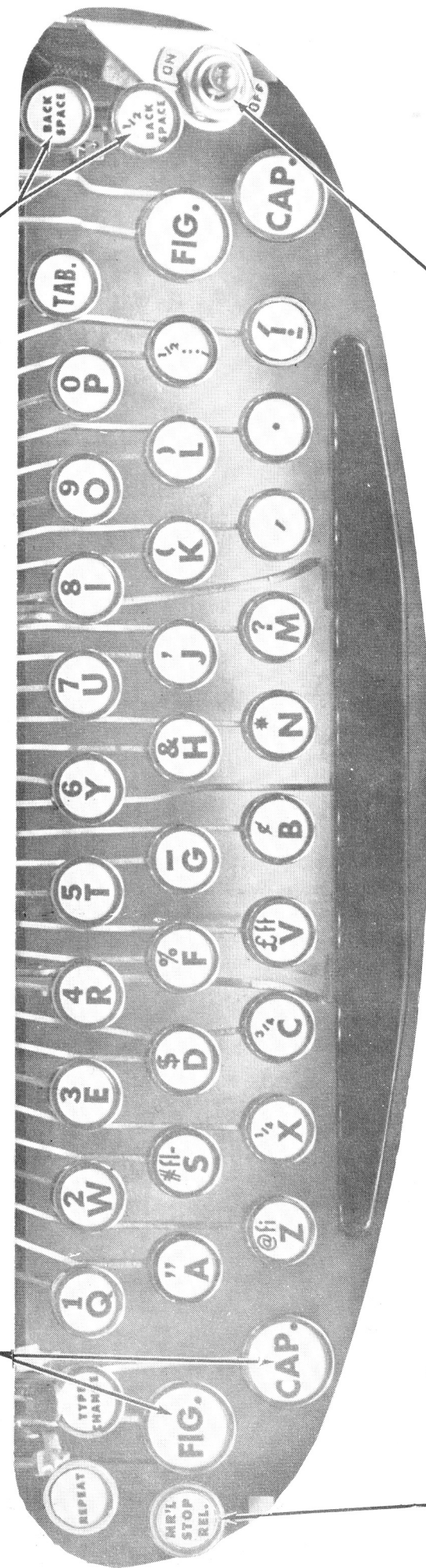
KEY ACTION



KEYBOARD

Capital and Figure Shift Keys at each end of the keyboard. To lock, press down *Cap*, or *Fig*, and bring nicked lock lever towards you. To release simply push lever back.

Back Space and Half-Back Space Keys are on right end of keyboard. Half-back Space Key holds carriage one-half space to right *only while the key is depressed*.



Marginal Release Key on all Vari-Typer models except the automatic justifying (*A series*). The 'A' series use the carriage release lever instead.

Shadow Light Switch, at the right end of keyboard, turns light on or off. This light enables the operator to see copy area more clearly when typing on stencils, tracing paper, tracing cloth.

CENTERING HEADINGS

Horizontal Centering

Headings fall into three basic categories as far as *horizontal* centering is concerned:

1. Heading with an *odd number of characters*

Example: VARI-TYPER SCHOOL (17)

(*Note:* Each space counts as one character)

2. Heading with an *even number of characters*

Example: VARI-TYPER SCHOOLS (18)

3. Letter-spaced heading

Example: VARI-TYPER SCHOOL

For all three types of headings it is necessary to have a center line on the master copy. Some masters, such as stencil, have a printed center line. On other masters, draw the center line lightly with *non-reproducing* pencil (*blue* for photo-offset masters, *water-soluble* for direct-to-plate).

A. *Heading with ODD number of characters.* In this type of heading the center character should fall *exactly on center line* with half of remaining letters on each side of center.

Example: VARI-TYPER SCHOOL (17)

1. Position carriage so ribbon shield pointer is *exactly on center line*.*
2. Deducting odd (or center) character, back space $\frac{1}{2}$ the number of characters in the heading.

Example: $17 - 1 = 16$; $\frac{1}{2}$ of $16 = 8$

3. Back space 8 spaces. Type heading.

B. *Heading with EVEN number of characters.* In this type of heading center line should fall between two middle characters of heading.

Example: VARI-TYPER SCHOOLS (18)

1. Position carriage so ribbon shield pointer is $\frac{1}{2}$ space to right of center line.*
2. Back space one-half the number of characters in heading.

Example: $\frac{1}{2}$ of $18 = 9$

3. Back space 9 spaces. Type heading.

C. *Letter-spaced Heading.*

1. Position carriage so that ribbon shield pointer is *exactly on center line*.*
2. Count characters and spaces in same way as for regular heading.

Example: VARI-TYPER SCHOOLS (18)

* Position carriage with Escapement Rack.

3. Back space one less than TOTAL number of characters in heading.

Example: Back space 17 spaces

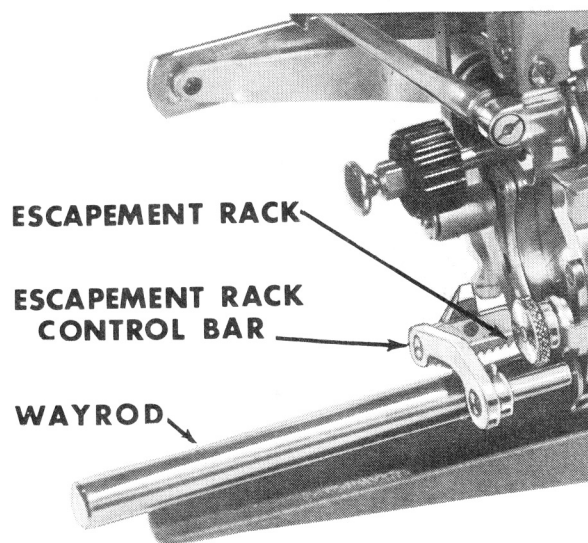
4. Type heading placing *one space* between letters and *three spaces* between words. Heading will be centered automatically regardless of number of characters in it.

ESCAPEMENT RACK

The escapement rack can be used to adjust the carriage position slightly, placing the ribbon shield pointer exactly on center or $\frac{1}{2}$ space to right of center according to centering requirements of any heading.

Curved bars at extreme left and right ends of carriage are connected to escapement rack at back of machine. Whenever you move the horizontal spacing lever, these bars move automatically *from the back*. They can also be lifted *manually*. When these bars are *up*, the carriage is completely disengaged from all horizontal spacing gears. Use *left bar* to lift escapement rack so that you can hold carriage in position while escapement rack is disengaged.

While escapement rack is *up*, press *back space key once*. Then let escapement rack down. This will shift carriage position slightly and reposition ribbon shield pointer. If pointer is not in desired position, repeat this operation.



Curved bar at left end of carriage controls escapement rack. Rest hand on wayrod (to brace carriage) and lift rack control bar from back.

CENTERING HEADINGS (cont'd)

Horizontal Centering

ESCAPEMENT RACK PRACTICE

With practice you can position ribbon shield pointer on first attempt. To acquaint yourself with the use of the escapement rack, try the following exercise:

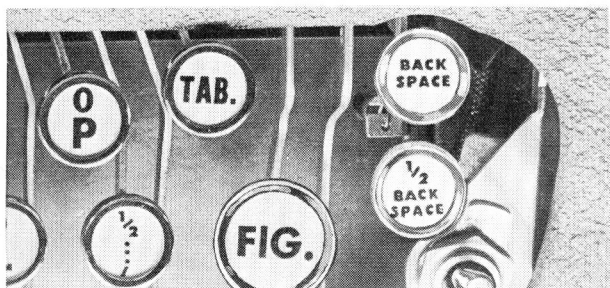
1. Type a row of six "i's" i i i i i i
2. Move down 1 click and, using escapement rack and back space key, position shield pointer half-way between the first and second i's.
3. Type second row of five "i's" i i i i i
4. Repeat the above operation, reducing the number of i's in each row by one.
5. Final results should look like this:

```

      i
     i i
    i i i
   i i i i
  i i i i i
 i i i i i i

```

When you have mastered this exercise, practice centering the three basic types of headings around a ruled center line.



HALF-BACK SPACER

Headings may also be centered by means of the half-back space key. This key holds the carriage one-half space to the right *only while key is depressed*. It is particularly useful when centering a word that has an *odd* number of characters below a word than has an *even* number of characters, or vice versa.

Example: AVERAGE (7 characters)
 NUMBER (6 characters)

1. Type "AVERAGE"
2. Space vertically and line up pointer with second letter of "AVERAGE" (under v)
3. Press half-back spacer and *hold*. Strike N. (N will now be centered between A and v, leaving 1/2 space in front of word as compared to line above it.) Release half-back spacer, *space*.

4. Hold half-back spacer, type u, release half-back key, *space*.
5. Hold half-back spacer, type M, release half-back key, *space*.
6. Continue same procedure for each letter in the word.

Example: AVERAGE
 NUMBER

Last letters of word "NUMBER" will be indented 1/2 space from word above it.

To find starting position for any word, where *first line is longer than second*, subtract the number of characters in second line from number in first line.

Example: AVERAGE (7)
 DAYS (4)

Difference = 3 spaces

Divide the difference as evenly as possible, without using fractions. (*Example:* 2 and 1) Type first word. Move paper up to type next line. From starting point of first line, space in the *larger* of the two numbers. (*Example:* 2) Half-back space word. This will place 1 1/2 spaces on each side of second word in relation to line above.

Example: AVERAGE
 DAYS

If the second line is longer than the top line, type the second line first. Move paper down in machine until you reach position for top line. Center top line over the second line, using the half-back spacer.

Example: DATE
 STARTED (type this line first)

Always remember that the half-back spaced word is placed 1/2 space to the LEFT of normal typing position.

When using the half-back spacing method of centering a heading that consists of two or more words, press space bar *twice* between the words to obtain a normal, one-space separation.

Since the Half-Back Spacing Method requires the use of the half-back spacer on every letter of the heading, it should be used mostly for short headings like those that appear on forms. The Escapement Rack Method of adjusting the carriage position is the simplest and fastest centering method for long headings.

CENTERING HEADINGS

Vertical Centering

A form consists of ruled (or dotted) lines plus copy. If the form has a predominance of copy (*Form A*, below), the lines are ruled *after* the copy is composed; where ruled lines predominate (*Form B*), the column headings are centered, horizontally and vertically, after the lines are drawn.

Form A

NAME _____

ADDRESS _____ TEL. NO. _____

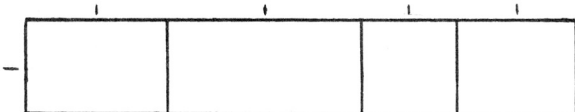
CITY _____ STATE _____

Form B

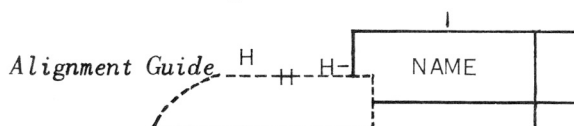
NAME	STREET ADDRESS	CITY AND STATE	TELEPHONE NUMBER

There are four basic types of vertically centered headings, and each is centered from the center position of the ruled box. Before you attempt to center any heading, you must locate and mark exact center of each ruled box.

Measure the width of each box and place a light dot at exact center, just above the top rule. Then measure the depth of the box and place a dot at exact center, just outside of the side rule. One side dot is sufficient for all boxes (of the same depth) in each row of headings.



A. Single Line Heading. Turn the feed rolls until alignment guide is *slightly below* side guide dot. To judge how far below the dot the alignment guide should be, type the letter "H" (capital) in margin near dot. The dot should be in line with cross-bar of H. Pull out feed roll ratchet release pin and move paper up or down until this alignment is achieved.



Move carriage until ribbon shield pointer is lined up with center dot at top of box and center heading horizontally by Escapement Rack or Half-Back Spacing Method. (Guide letters typed in margin can be removed from the master)

copy by usual correction method used for that type of master.)

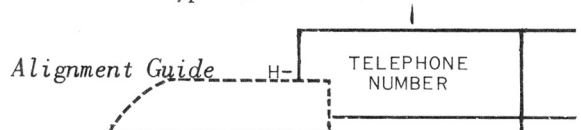
B. Three Line Heading. Center middle line first in same manner as single line head. Then move up or down to center other two lines.



C. Two Line Heading—with an ODD number of clicks between lines. The number of feed roll clicks between lines of a heading depends on the type size. Most types require 3 clicks. For this type of heading place alignment guide *exactly on* side guide dot. Move up *one* click and type top line. Move down three clicks and type bottom line.



D. Two Line Heading—with an EVEN number of clicks between lines. Some headings will require 2 or 4 clicks between lines. For these headings place alignment guide in same position as for single line heading. Move up *half the number of clicks to be used between lines* and type top line of heading. Move down *full amount of clicks* and type bottom line.



E. Typing List on Pre-Ruled Form. Line up the alignment guide with ruled line. Move up one click and type first line of copy. Copy will appear to *rest* on ruled line without actually touching it. To find number of clicks between copy lines, count clicks between first copy line and next ruled line and *subtract one*. For example, if there are 7 clicks between first copy line and second ruled line, you should put *six* clicks between lines of copy. While typing list, if copy appears too close or too far away from ruled line, pull out feed roll ratchet release pin and re-adjust alignment.

Alignment Guide	2AS-3204	RIBBONS
	2AS-3202	RIBBON SHIELD
	3AS-1105	VARI-LINE GEAR
	300	CASLON TYPE

STATISTICAL OR TABULAR COPY

Statistical or tabular copy can be easily and effectively composed on the *Vari-Typer*. Tables that would ordinarily require over-size sheets of paper to accommodate the numerous columns and lines of copy can be condensed to fit standard size pages, making them easier to file or insert in booklets.

The factors which increase the readability of a table are: (1) adequate white space between columns and at margins and (2) emphasis on column headings, sub-totals, totals, and other items of special interest to the reader. The variety of spacings available on the *Vari-Typer* will provide the necessary white space, and the contrasting styles of type will produce emphasis where required.

Follow these simple steps in planning the layout of a tabular page:

1. Count the longest line in each column.
2. Total these. This total is called "*Spaces Occupied*," because it is the total number of spaces occupied by typed material.
3. Select a type with a horizontal spacing that will accommodate:
 - a. Spaces Occupied
 - b. Adequate margins
 - c. Adequate space between columns
4. Select the line spacing that will accommodate the number of lines to be typed.

EXAMPLE

Suppose that you have a 10 column tabular job to do on a page $8\frac{1}{2}$ inches wide and 11 inches long. The copy area is 7 inches wide and $8\frac{1}{2}$ inches deep, providing a $\frac{3}{4}$ inch margin at each side, a 1 inch margin at top, and $1\frac{1}{2}$ inch margin at bottom of page. The 10 columns add to 91 *spaces occupied* by typed material.

1. Try each of the horizontal spacings, beginning with the widest possible spacing of 10 characters per inch.

$$7" \times 10 = 70 \text{ (spaces available)}$$

70 is the total number of spaces available for typing the copy at 10 horizontal spacing. Since the typed material alone requires 91 spaces, 10 spacing is too wide for the table in this example.

2. Try 12 characters per inch.

$$7" \times 12 = 84 \text{ (spaces available)}$$

84 spaces are not adequate for the copy.

3. Try 14 characters per inch.

$$7" \times 14 = 98 \text{ (spaces available)}$$

98 spaces will allow enough room for the typed material, but only 7 spaces (98-91) remain to insert between the columns. Since there are 10 columns in the table, 14 spacing is not adequate for the copy.

4. Try 16 characters per inch.

$$7" \times 16 = 112 \text{ (spaces available)}$$

$$112 - 91 = 21 \text{ spaces between columns}$$

There are 9 places *between* columns, and the first three columns differ from the others, so you could place 3 spaces after each of the first 3 columns (9 spaces in all) and 2 spaces between the other columns (total of 12 spaces). This will distribute the 21 spaces in the best manner for an effective layout of the table.

It is not always necessary to try all four horizontal spacings to find the best one, but usually it is necessary to try two different horizontal spacings and make a choice between them.

5. Count the number of lines in the table.

Example: 65 lines including heading

6. Try a vertical spacing to see if copy will fit in the required copy depth. The most common vertical spacing is six lines per inch. *Divide 6 into the total number of lines to find how many inches the copy will occupy at that spacing.*

$$65 \div 6 = \text{Nearly 11 inches}$$

The copy depth is $8\frac{1}{2}$ inches, so this vertical spacing is too large for the copy.

7. Try the next smaller standard vertical spacing—9 lines per inch.

$$65 \div 9 = 7 \text{ inches (plus 2 lines)}$$

This vertical spacing will allow the copy to fit within the required area. Assuming that the copy must fit in *exactly* $8\frac{1}{2}$ " vertically, convert the copy length in inches into feed roll *clicks*.

STATISTICAL OR TABULAR COPY (cont'd)

8½ inches x 18 (clicks per inch) =

153 clicks of vertical space

The vertical spacing of 9 lines per inch requires 2 clicks for each line of copy.

65 x 2 clicks per line = 130 clicks

153 clicks - 130 clicks =

23 extra clicks to distribute throughout the table.

There are 11 minor subdivisions and two major subdivisions on this table. If you insert *one extra click* at each minor subdivision and *two extra clicks* at each major subdivision, you will use up 15 of the extra clicks (11 + 4). The remaining 8 clicks can be inserted between the

two lines of the main heading and between the main heading and the body of the table.

In cases where the vertical spacing of 6 lines per inch is too large and 9 lines per inch is too small, try the intervening Vari-Line spacings of 6.6, 7, or 8 lines per inch.

Care in planning the layout of any page, as illustrated here, will produce a great saving in time, and the layout plan will act as a "road map" to guide you through the composition of the copy. The layout is an aid in type selection, for it indicates the spacing requirements for the job and reduces the selection to a basis of style.

Circulation by State and Geographical Divisions According to Population of Cities and Towns

		Total	over 500,000	100,000 to 500,000	25,000 to 100,000	10,000 to 25,000	2,500 to 10,000	1,000 to 2,500	Under 1000
<i>U. S. Total</i>		2,435,139	456,327	377,035	377,035	274,720	374,663	192,094	199,503
<i>New England</i>	8.13	198,057	25,475	46,307	41,919	32,123	32,423	12,637	7,173
<i>Maine</i>	1.17	28,593	-	-	8,126	3,967	10,533	3,182	2,011
<i>New Hampshire</i>	.69	16,810	-	-	8,216	3,967	2,640	2,845	1,108
<i>Vermont</i>	.44	10,730	-	-	-	2,308	4,763	1,741	918
<i>Massachusetts</i>	3.43	83,488	25,475	19,748	12,079	13,489	8,982	2,295	1,420
<i>Rhode Island</i>	.72	17,581	-	9,034	4,492	1,484	1,090	514	967
<i>Connecticut</i>	1.68	40,909	-	17,525	12,107	4,683	4,415	1,430	749

How a condensed statistical table achieves maximum readability is evident in these two contrasting tables which contain the same amount of copy. The table below was composed on the Vari-Typer, using sans-serif styles, 434-14 and 350-5, for the main and sub-heading, the Tribune News Bold (362-7½) for column headings and emphasis, and Tribune News (361-7½) for body copy.

CIRCULATION BY STATE AND GEOGRAPHICAL DIVISIONS

ACCORDING TO POPULATION OF CITIES AND TOWNS

	Per Cent	Total	Over 500,000	100,000 to 500,000	25,000 to 100,000	10,000 to 25,000	2,500 to 10,000	1,000 to 2,500	Under 1,000
U. S. TOTAL	100.00%	2,435,139	456,327	377,035	377,035	274,720	374,663	192,094	199,503
New England	8.13	198,057	25,475	46,307	41,919	32,123	32,423	12,637	7,173
Maine	1.17	28,593	-	-	8,126	3,967	10,533	3,182	2,011
New Hampshire	.69	16,810	-	-	8,216	3,967	2,640	2,845	1,108
Vermont	.44	10,730	-	-	-	2,308	4,763	1,741	918
Massachusetts	3.43	83,488	25,475	19,748	12,079	13,489	8,982	2,295	1,420
Rhode Island	.72	17,581	-	9,034	4,492	1,484	1,090	514	967
Connecticut	1.68	40,909	-	17,525	12,107	4,683	4,415	1,430	749

JUSTIFICATION

Manual Method

Copy that has an even right-hand margin (like that found in books, magazines, and newspapers) is called *justified* copy. The process by which an even right-hand margin is obtained is known as *justification*. There are three methods of justifying copy on standard model *Vari-Typers*—the *Manual Method*, the *Dial Pointer Method*, and the *Automatic Method*. The Manual Method may be used on any standard *Vari-Typer*. The other two methods—*Dial Pointer* and *Automatic*—require an “A” (automatic justifier) Model. The Manual Method can also be combined with the Dial Pointer and Automatic Methods.

HALF-BACK SPACING EXERCISE

The Manual Method of justification involves the use of the half-back space key. The following practice exercise, showing how to justify two short phrases of unequal length, illustrates how space can be removed or added to lines to achieve justified copy:

Example: the man is (10 characters)
the men are (11 characters)

These two phrases can be justified either by *condensing* (or *closing in*) the second line to equal the first line or by *expanding* (or *opening up*) the first line to equal the second.

Condensing:

1. Type “the man is” as a guide line.
2. Directly below, type “the,” space *once*.
3. Hold half-back space key, strike *m*, release half-back key, space.
4. Hold half-back space key, strike *e*, release half-back key, space.
5. Hold half-back space key, strike *n*, release half-back key, space *once*.
6. Type “are.”

Example: the man is
the men are

This *removes* 1/2 space *before* and 1/2 space *after* the word “men.” It reduces the phrase, “the men are,” one full space and justifies it with the guide line phrase, “the man is.”

Expanding:

1. Type “the men are” as a guide line.
2. Directly below, type “the,” space *twice*.
3. Hold half-back space key, strike *m*, release half-back key, space.
4. Hold half-back space key, strike *a*, release half-back key, space.
5. Hold half-back space key, strike *n*, release half-back key, space *twice*.
6. Type “is.”

Example: the men are
the man is

This *adds* 1/2 space *before* and 1/2 space *after* the word “man.” It expands the phrase, “the man is,” one full space and justifies it with the guide line phrase, “the men are.”

ROUGH COPY

Whenever copy is to be justified, it is necessary to type rough copy in order to know which lines must be expanded and which are to be condensed in the final typing. The rough copy should be neatly typed according to the following rules:

1. Figure the number of characters to be used in the guide line:
$$\text{Col. width (inches)} \times \text{horizontal spacing} = \text{no. of characters in guide line}$$

Example:

$3 \text{ inch col.} \times 12 \text{ (characters per inch)} = 36$

2. Type a guide line using 9 x's, space, 9 x's, space, etc.

Example: 36 characters at 12 spacing

xxxxxxxxxx xxxxxxxxxxxx xxxxxxxxxxxx xxxxxxxx

This produces a guide line that is easy to count, because the x's are in groups of 10 (9 x's + 1 space = 10 spaces).

3. Type rough copy directly under the guide line. If a line *extends beyond* the guide line, space once or twice and place extra letters in the margin.

JUSTIFICATION (cont'd)

Manual Method

Example:

xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxx
It was logical for the sailor, aw ay

If the line is *short* of the guide line, xx out the line to make it even with the guide line.

Example:

xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxx
from home influences which limitedxx

Notice that the xx's are typed *immediately following* last word typed:

Wrong: xxx xxxxxxxxxxx
.....and xx

Right: xxx xxxxxxxxxxx
.....andxxx

If you follow these rules in typing your rough copy, you will find that each line of copy will act as a guide line for the next line—an important factor when your rough copy lines get further and further away from the original guide line.

4. Space only *once* after periods. This will eliminate superfluous white space and give copy a printed appearance.
5. Use small paragraph indentations, approximately one space for every inch in column width. A three-inch column should be indented three spaces; a two-inch column, two spaces; a 2½ inch width, two or three spaces, etc.
6. The number of spaces that any line can be short of (or extend beyond) the guide line can be determined by counting the number of spaces (between words) on the line. *Half* of these spaces equals the maximum number of characters the copy line can be short of (or extend beyond) the guide line. For example, if the line has *six* or *seven* spaces between words, the line can be no more than *three* spaces short of or *three* characters over the guide line.

7. Many operators insert an extra feed roll 'click' between lines on the rough copy, so that when copy is marked, the marks are easy to distinguish and copy is easier to read. *Always remember that accuracy and neatness in rough copy preparation will enable you to compose the final, justified copy much faster and more easily.*

MARKING COPY

1. Use a *circle* to mark words that are to be condensed or "closed in."

Example: the men are

2. Use a *check mark* (✓) for words to be expanded or "opened up."

Example: the man is

3. *Do not mark:*
 - a. First word on line.
 - b. Last word on line.
 - c. Two adjacent words (two words typed together on line). There *must* be at least one word between any two words that are marked.

FINAL JUSTIFIED COPY

1. Center copy:
 - a. Page width - copy width =
Total margin space
 - b. Total margin ÷ 2 = Left margin
Example: 8½ in. (page width)
- 3 in. (copy width)
5½ in. (total margin)
5½ in. ÷ 2 = 2¾ in. (left margin)
2. Measure from left edge of master page and place light dot at the starting point of final copy. Type the copy, half-back spacing words where indicated on marked rough copy.
3. Do not type guide line on final master sheet. (See examples on next page.)

JUSTIFICATION (cont'd)

Manual Method

XXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX (48)

For the first eighty years after the discovery of America, the fashion of smoking for pleasure was mainly restricted to sailors, and was generally found only in the chief ports of Portugal and Spain.

(Rough Copy typed in a 4 inch width at 12 characters per inch)

XXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX (48)

For the first eighty years after the discovery of America, the fashion of smoking for pleasure was mainly restricted to sailors, and was generally found only in the chief ports of Portugal and Spain.

(Same Rough Copy marked for justification)

The History of Smoking in America

For the first eighty years after the discovery of America, the fashion of smoking for pleasure was mainly restricted to sailors, and was generally found only in the chief ports of Portugal and Spain.

(Example of Justified Copy centered on master page)

AUTOMATIC JUSTIFICATION

Dial Pointer Method

All A and AE Model *Vari-Typers* are equipped with an *automatic justifier*—a mechanism that automatically justifies the right margin of any column width from 1.9 to 7.4 inches.

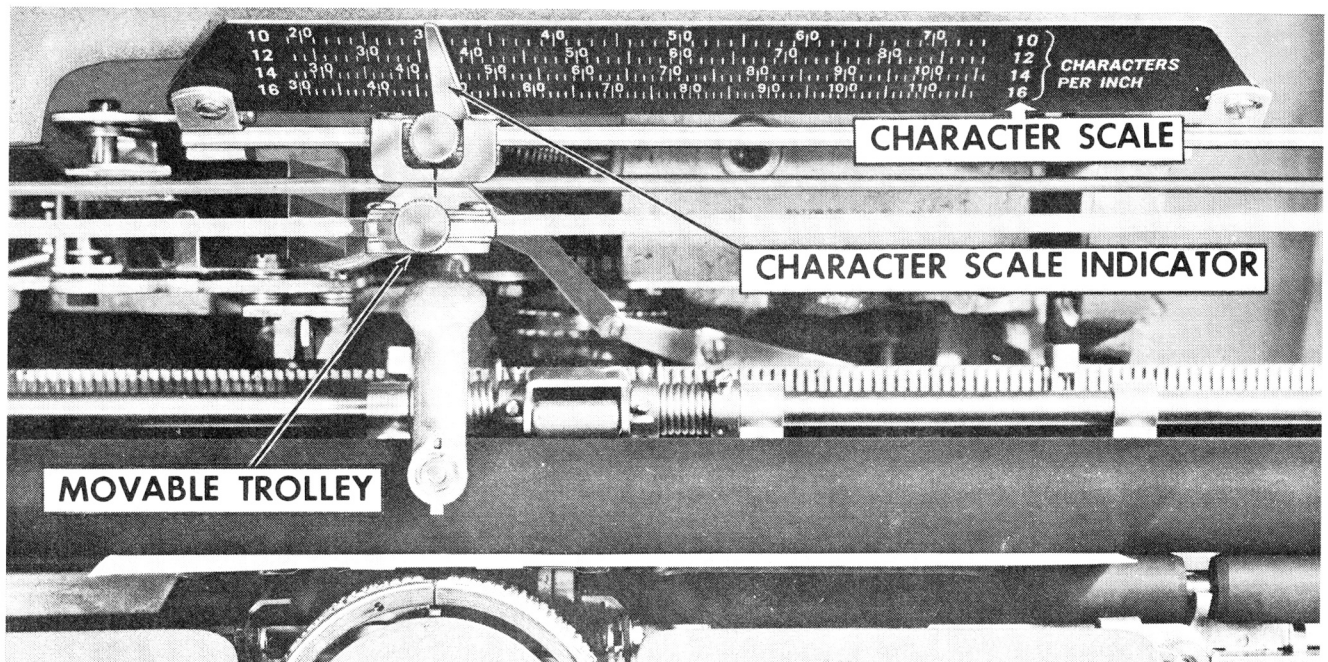
There are two methods of using the automatic justifier, and each has specific uses or applications. The *Dial Pointer Method* can be used for composing copy on any kind of duplicating master. In this method the rough copy is pre-typed in a manner similar to that used in the *Manual Method* of justification. The only difference is that each line of the rough copy is x'd out to equal the guide line, for the automatic justifier will only stretch copy (it does not condense). The final copy is prepared by hand-setting the dial pointer for the amount of "stretch" necessary to justify each line. The second method of using the automatic justifier, known as the *Automatic Method*, is used primarily for photo-offset copy. In this method the rough and finished copy are typed line for line with the machine setting the dial pointer *automatically* for the proper amount of stretch in the final copy. Since rough and finished copy appear side by side, the final copy is cut off and pasted on a master sheet to be photographed.

The same parts of the automatic justifier are used for both the *Dial Pointer* and *Automatic Methods* but in a somewhat different manner. Try each of the justifier parts as described here to acquaint yourself with their function and operation.

JUSTIFIER PARTS

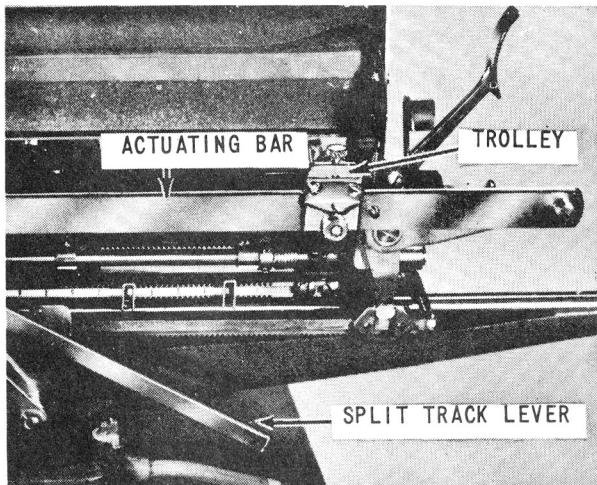
The Character Scale, which extends along the back of the machine, is actually 4 separate scales, one for each horizontal spacing. These scales are numbered at each end — 10, 12, 14, and 16 (on A Models) or 12, 14, 16, and 18 (on AE Models). The scale used in the justifier operation *must* agree with the horizontal spacing at which machine is set.

The Character Scale Indicator is a sliding mechanism that can be placed at any position on the character scale. The flat, left edge of the indicator is used to determine the correct setting. At the base of the indicator is a thumbscrew which must be tightened to hold indicator in position, and below the thumbscrew is a groove which must line up with groove on trolley.

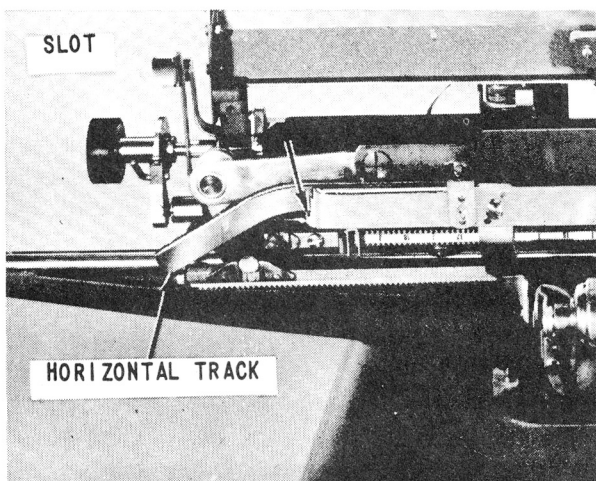


AUTOMATIC JUSTIFICATION

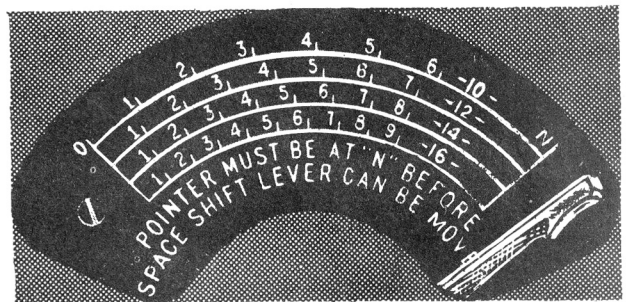
Dial Pointer Method (cont'd)



The Movable Trolley is a thumbscrew device which slides along the actuating bar. When the justifier is not in use, the trolley is locked at extreme left of actuating bar. To move trolley into position for justification, hold up actuating bar (left hand *under* bar at *extreme left*), loosen thumbscrew, and move trolley to a position *slightly right* of the character scale indicator. *Release* actuating bar and, guiding trolley with thumb and forefinger of *both* hands, slide trolley to left until groove on trolley lines up with groove on character scale. *Tighten thumbscrew*. When justifier is not in use, return trolley to locked position at left end of actuating bar. *Hold actuating bar up* (at extreme left); then slide trolley to left as far as it will go. *Tighten thumbscrew*.



A roller is connected to the bottom of the trolley mechanism. When justifier is set, the roller rides on a track that is connected to the character scale indicator. This track is split just below the character scale indicator. The right arm of this track is called the horizontal track and is supported by a slotted bracket near right end of character scale. *The horizontal track must always rest in bracket slot*. If, for any reason, it drops out of slot, lift and replace it in slot. The left arm of the split track is a lever which may be set at different angles of slope. The angle of this lever is controlled by the *dial pointer* on front of the machine. During justifier operation the trolley travels down this section of the track, stretching the justified line to the desired width.



The Dial Pointer Scale, a fan-shaped dial above right end of keyboard, is used to control the amount of "stretch" for each line of justified copy. Like the character scale, it is composed of four separate scales, one for each of the four horizontal spacings of the machine. At the right end of each scale is an identifying number to designate which scale to use at a given spacing. For example, if the horizontal spacing lever is set at 12, use the 12 scale on the justifier dial, disregarding the other three scales. Each scale has numbers which run consecutively from 0 up to 6, 7, 8, 9, or 10, depending on the spacing used, and a movable pointer can be set at any of these numbers from 0 to the highest number. At the extreme right end of the top scale is the letter "N," and *printed on the scale is an important note: POINTER MUST BE AT "N" BEFORE SPACE SHIFT LEVER CAN BE MOVED*. This means that the dial pointer should be pushed as far right as possible before changing to a different horizontal spacing.

AUTOMATIC JUSTIFICATION

Dial Pointer Method (cont'd)



Practice using the dial pointer, setting it at different positions on the scale. First, move pointer all the way to the right and set horizontal spacing lever at 12. Then push dial pointer *slowly* to the left. When pointer reaches 7 (highest number on 12 scale), you will hear and feel a distinct "click." This is the proper dial pointer setting for any lines which are seven spaces short of selected column width. Now move pointer *slowly* to 6, and you will hear another click. Continue moving pointer to left, pausing at each number to hear and feel click. When dial pointer reaches 0, push pointer all the way to the right (to clear the dial), and repeat same procedure. Move dial pointer all the way to the right again and change space lever to 14 spacing. The highest number on the 14 scale is 8. Start with 8 and move pointer slowly to the left, counting each click. Learn to count from highest number *backward* to 0. For example, 8-7-6-5-4-3-2-1-0. If you wish to set pointer on 5 (on 14 scale), count 8-7-6-5 and leave pointer at that position. Once you have practiced moving the pointer slowly a few times, you can then set the dial pointer quickly and accurately.

ROUGH COPY PREPARATION

1. Find the number of characters in guide line for selected column width.

Note: Usually, the number of characters in the guide line is equal to the column width (in inches) multiplied by the horizontal spacing to be used in the copy. For horizontal spacings of 10 and 12 characters per inch this holds true. At 14, 16, and 18 spacings, however, there is a slight variation in the character width which affects the number of characters obtained in the selected column width. This variation is most apparent in columns, 3 inches or more in width. The following table lists the number of characters in a 3 inch width, at each of the horizontal spacings:

3" at 10 spacing = 30 characters
3" at 12 spacing = 36 characters
3" at 14 spacing = 43 characters (<i>not 42</i>)
3" at 16 spacing = 47 characters (<i>not 48</i>)
3" at 18 spacing = 53 characters (<i>not 54</i>)

AUTOMATIC JUSTIFICATION

Dial Pointer Method (cont'd)

Notice that there is a *gain* of 1 character in every 3 inches at 14 spacing and a *loss* of 1 character in every 3 inches at 16 and 18 spacings. This, of course, means that in a *six inch* width there is a gain of *two* characters at 14 spacing and a loss of *two* characters at 16 and 18 spacings.

The easiest way to obtain a guide line at any spacing is to mark the beginning and ending of the desired width on a sheet of paper and fill in the intervening space with xx's:

- Example -

3 inch width at 14 spacing

xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxx

Always re-check guide line with a ruler.

2. *Type copy so that each line is either equal to or short of the guide line.*

The automatic justifier spreads lines but does not condense them, so do not extend any lines beyond the guide line. Each line must be x'd out to the end of the guide line to indicate the number of spaces short on that line *and* to allow each line to act as a guide line for the next one.

- Example -

xxxxxxxx xxxxxxxx xxxxxxxx xxxxxx

2 It is important to distinguishxx
0 between principles of education and
2 aims of education. Too frequentlyxx
4 the two terms are confused. Anyxxxx
2 principle is a starting point. Itxx
0 represents the statement of a truth
1 generally accepted. Taken togetherx
0 they are a philosophy of life.

(The numbers in front of each line of rough copy is equivalent to the number of x's on that line. These numbers can either be typed as shown here or written by hand, but having the number in front of the line simplifies and speeds up the typing of justified copy.)

3. *Do not allow any line to be short more than the maximum for that spacing.*

The highest number on each dial scale denotes the maximum stretch at that spacing and, con-

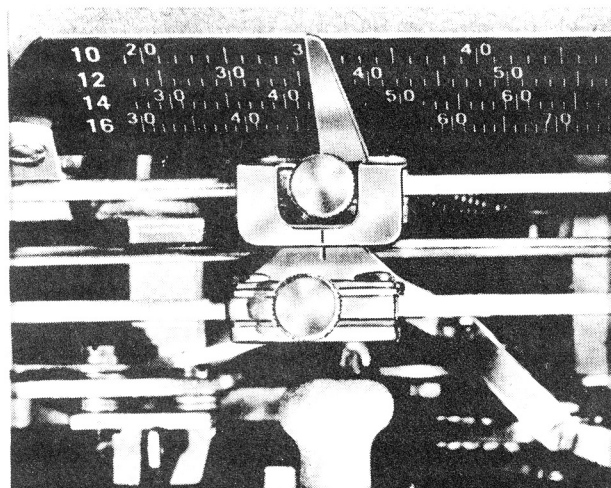
sequently, the maximum number of spaces a line can be short of guide line:

Horizontal Spacing		Maximum Stretch
10	-	6
12	-	7
14	-	8
16	-	9
18	-	10

SETTING JUSTIFIER

There are just three basic steps in setting the automatic justifier for Dial Pointer justification, *but they must be performed in the proper sequence*, as follows:

1. *Set the character scale at the number of characters in guide line, using the scale that corresponds with horizontal spacing at which machine is set.*
2. *Insert master sheet in feed rolls. Line up the ribbon shield pointer at desired starting point.*
3. *Match the groove on the trolley with the groove on the character scale indicator.*



Remember this one basic rule in using the automatic justifier - *The Character Scale and Trolley must always match at the STARTING POINT of the Justified Copy.* This rule applies to both methods of using the justifier.

AUTOMATIC JUSTIFICATION

Dial Pointer Method (cont'd)

TYPING JUSTIFIED COPY

- At starting point of *each* line, set dial pointer manually at number that corresponds with the spaces short on that line. *Example:* For a line that is two spaces short, set dial pointer at 2.

- *Use no marginal stops.* The left hand stop, if set at copy starting point or within 1" of that position, will prevent dial pointer from moving the full width of the scale. If at any time the dial pointer will not move freely all the way to zero, check to see if there is a marginal stop at or near the starting point of the copy.

- For lines that are exactly equal to the rough copy guide line, set dial pointer at *zero*. Do not set pointer at *N*, as this will cause line to spread.

- For an incomplete line, such as a paragraph ending, set dial pointer at *zero*.

- If line to be typed requires a *smaller* dial pointer setting than the preceding line, simply move the dial pointer to the smaller number.

- If line to be typed requires a *larger* dial pointer setting than the preceding line, the dial pointer must be cleared back to *N* and reset.

- Never move dial pointer when ribbon shield pointer is *right* of starting point on copy (where trolley and character scale are matched). Return to starting point to adjust setting.

- Do not use back spacer to return to starting point of copy. Use carriage knob to pull carriage back to starting position.

- Be sure that both the *character scale* and the *dial pointer scale* are being used at the same horizontal spacing for which the machine is set.

- If line ends in a long word that cannot or should not be hyphenated (as in proper names), include the word on the end of the rough copy line, even though this extends the line a character or two beyond the guide line. On

the justified copy set dial pointer at *zero* and half-back space enough words on the line to condense it to the justified column width.

- When justified copy is completed, return trolley to locked up position at left end of actuating bar. If you fail to do this, any further rough copy (or ordinary typing) will be stretched or spread. This stretch may be prevented, however, without returning trolley to locked position, *if dial pointer is kept at zero position on scale.*

- Example of Justified Copy -

It is important to distinguish between principles of education and aims of education. Too frequently the two terms are confused. Any principle is a starting point. It represents the statement of a truth generally accepted. Taken together they are a philosophy of life.

CENTERING HEADINGS

When typing justified copy, it is frequently necessary to place a heading above (or a subheading within) the copy. The heading or subheading may require a wider horizontal spacing than that used for the text material, but these headings may be centered and spaced attractively without changing the horizontal spacing, as described below:

1. Count characters in heading to be typed.

Example: AIMS OF EDUCATION (17)

2. Add the highest number on the dial scale being used, to the number of characters in the heading.

Example: If text copy is being typed at 14 spacing, the highest number on the scale would be 8. $17 + 8 = 25$. This is the total number of spaces the heading will occupy.

AUTOMATIC JUSTIFICATION

Dial Pointer Method (cont'd)

3. Count the characters in the column width.

Example: Column width = 35 characters

4. Subtract the total number of spaces heading will occupy from the number of characters in the column width.

Example: $35 - 25 = 10$

5. Divide result by two. This is the number of spaces to space in from left margin of copy before typing heading.

Example: $10 \div 2 = 5$

6. Set dial pointer at number used in Step 2, space in the number of spaces figured in Step 5, and type heading.

Example: Set pointer at 8, space over 5 spaces and type heading.

AIMS OF EDUCATION

It is important to distinguish between principles of education and aims of education. Too frequently the two terms are confused. Any principle is a starting point. It represents the statement of a truth generally accepted. Taken together they are a philosophy of life.

Note: If an uneven number is obtained in Step 4, so that it cannot be divided evenly by 2, use the *next lower number* on the dial scale.

Example: PROMOTIONS (10)

Column width: 35 characters at 14 spacing

- (A) First trial:

$10 \text{ (head)} + 8 \text{ (dial setting)} = 18$

$35 - 18 = 17$ (not evenly divisible by 2)

- (B) Second trial:

$10 \text{ (head)} + 7 \text{ (dial setting)} = 17$

$35 - 17 = 18$ Half of 18 = 9 spaces

Set dial pointer at 7 (on 14 scale), space in 9 spaces from left margin, and type heading.

This method of centering headings may also be used when the horizontal spacing of the text and heading types are the same. Less stretch is required for the heading in this case, so a lower dial pointer setting, such as 1 or 0, should be used.

INDENTATIONS AND RUN-AROUNDS

An indentation or run-around is a change in column width, perhaps for an outline of procedure, to allow space for a picture, or even for the effect of appearance. The term, *run-around*, usually applies to copy that fits around a picture. There are three types of indentation used in text composition—copy indented *from the left*, *from the right*, or *both margins*.

Indentation from Left Margin. When copy is indented from the left margin, only one change is necessary in the justifier setting. Simply reset the character scale indicator to the number of characters in the new column width. *Do not change or move trolley setting.*

— Example —

Original column width = 35 characters

Indented column width = 29 characters

Move character scale indicator to 29. Space in six spaces from original starting point. Look at character scale indicator. It will be aligned exactly with the trolley, although the trolley setting was not changed. This position is the new *starting point* of the copy and conforms with the rule that the *character scale and trolley must always match at the starting point of the justified copy.*

Indentation from Right or from Both Margins. If indentation from the right margin or from both margins is desired, the justifier must be reset (both character scale indicator and trolley) for the indented column width. Instead of resetting the justifier, the indented width may be justified manually. If manual justification is used, simply set dial pointer at *zero* until indented copy is completed.

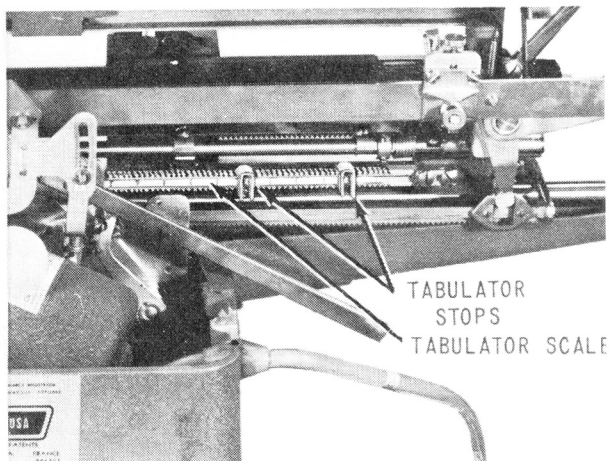
AUTOMATIC JUSTIFICATION

Automatic Method

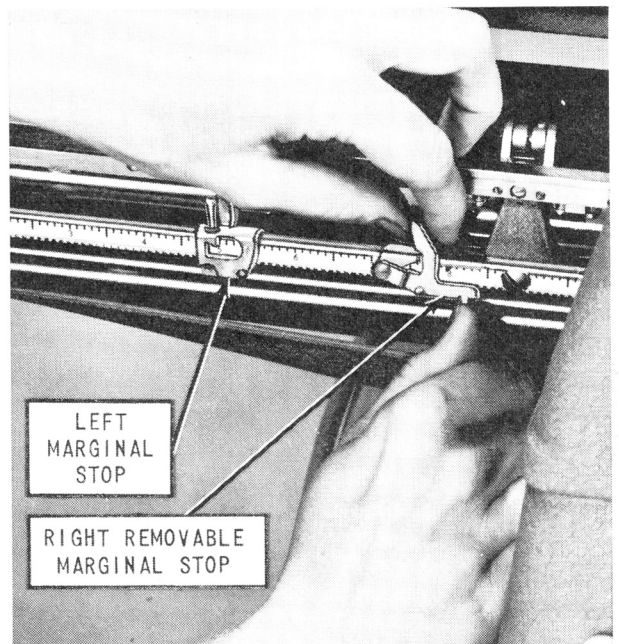
In the *Automatic Method* of using the justifier rough and finished copy are typed line for line on one sheet of paper. The rough copy is cut away and discarded after the copy is completed. The finished, justified copy is pasted into position on the layout page. The *Vari-Typer* is set up so that the dial pointer is mechanically and *automatically* operated instead of being set by hand (as in the *Dial Pointer Method*).

PARTS USED IN JUSTIFICATION

The same parts of the automatic justifier—the *character scale and indicator*, the *trolley*, and the *dial pointer scale*—are used when composing copy by the Automatic Method. In addition, there are three parts on the machine which are used in this method.



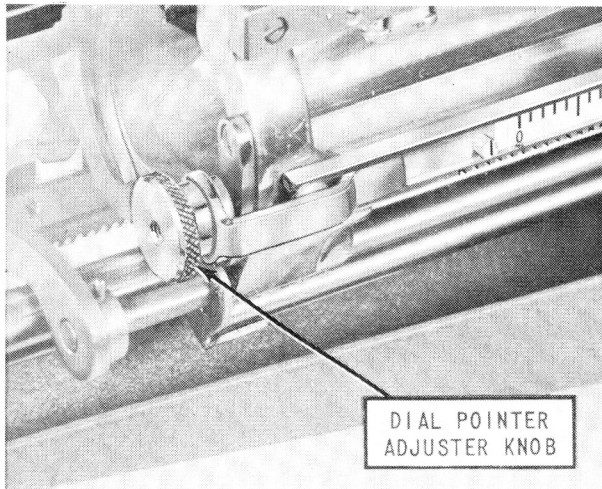
Tabulator Scale and Stops. The tabulator scale is on the back of the carriage and, like the marginal and alignment scales, is divided into inches and tenths of an inch. Numbers on the scale are inverted so that you can read them easily by looking down at the scale from above. The tabulator stop has two prongs which are inserted into the teeth of the scale, open end *down*. Hook closed end over top of tabulator scale, press two prongs together slightly, and push stop into position. The desired number should be centered between the prongs. Before setting the justifier, insert a tabulator stop at 9 on the tabulator scale. This position will be the *starting point* (left margin) of the finished copy.



Marginal Scale and Stops. The marginal scale is on the front of the carriage and is also marked in inches and tenths of an inch. The left hand marginal stop is a permanent stop that does not come off the scale. It can be moved by pressing the two top levers together and sliding it to desired position. The right hand stop is *removable* (on the A model). It can be taken off the marginal scale and placed back on the scale at any position. To insert the removable stop on the scale, hook the bottom of the stop under the scale, squeeze the two levers at top of stop together *gently*, and hook the stop over the top of the scale. After stop is on scale, squeeze the two levers slightly and slide stop to desired position. Both the left and right hand stops have a small pointer that falls directly on the scale. This pointer indicates the position of the stop on the scale. On the bottom of each stop is a tooth or prong which is flat on one edge. It is this tooth that actually stops the carriage. Press against the flat edge of each stop to make sure it is firmly in place. On right stop press tooth toward the right; on left stop press toward the left. The right hand stop should have the number 10 stamped on the bottom edge to conform with the divisions on the marginal scale. Never use a stop stamped 12 on A Model *Vari-Typers*.

AUTOMATIC JUSTIFICATION

Automatic Method (cont'd)



Dial Pointer Adjuster Knob. At the left end of the marginal scale is a knob which has two functions. It moves the marginal scale left or right to reduce the amount of "play" when the carriage is banked against left stop, and it also adjusts the dial pointer so that it will be correctly and automatically positioned for any amount of copy "stretch" (within justifier limits). Before setting the justifier, turn this knob toward you as far as it will go *but do not tighten the knob*. It is never necessary to tighten this knob at any setting or position.

SETTING THE JUSTIFIER

Justifier settings in this method must be precise and accurate. Be sure to follow each step *in the proper sequence*. Once you have mastered these steps, you will be able to set the justifier in less than one minute. After the justifier is set, you can continue typing page after page of justified copy quickly and accurately.

1. Insert type and set machine for proper spacing and impression.
2. Place marginal stops for desired column width—right hand removable stop at 8 (one inch away from starting position of justified copy, where tabulator stop is set) and the left hand stop as many inches from 8 as necessary to provide correct column width. The column width will always be measured in inches and

tenths of an inch, e.g. 2.9, 3.6, 4.0, etc. *Example:* For a 3 inch column set left stop at 5 and right stop at 8.

3. Pull carriage to the right so that it holds against left hand marginal stop. Do not slam carriage against stop; just pull it firmly and evenly. Do not use carriage release lever as this lever acts as a marginal release, and carriage will go beyond the left stop.
4. Move trolley to the right. Move it to the end of character scale and tighten thumbscrew.
5. Tap space bar until dial pointer moves up to a position slightly right of the highest number on the scale being used.
6. *ADJUST THE DIAL POINTER.* Move the dial pointer adjuster knob (at left end of marginal scale) away from you until the dial pointer rests on the line to the right of the highest number on the scale *and you hear a click on back of machine*. If dial pointer passes the highest number, continue adjusting the pointer until it reaches the next number on the scale *and you hear the click*.
7. Bank carriage and insert paper. Position paper so that both the rough and finished copy will fit on page width. Bring alignment scale down on paper to check copy position. *Example:* In a 3 inch column the rough copy will extend from 5 to 8 on the scale, and the justified copy will start at 9 and end at 12. Be sure that all of these positions fall on the paper. Paper should be wide enough to allow for typing of the two column widths, rough and justified, plus at least two inches more. On wide columns turn paper lengthwise or use wider sheets of paper.
8. Space across page. Count spaces from left margin stop until dial pointer reaches zero on scale. (This will give you the correct number of characters in the column width, regardless of spacing or column width used.) *Example:* In a 3 inch column at 12 spacing the count would be 36 characters.

AUTOMATIC JUSTIFICATION

Automatic Method (cont'd)

9. Set the character scale indicator at the number of characters in the column width. *Example:* Set character scale indicator at 36 on 12 scale.
10. Press tabulator key, *space once*, and match trolley to character scale indicator. This conforms with the justifier rule that *the character scale and trolley must match at the starting point of the justified copy.*
11. Recheck each step. One step overlooked or improperly carried out may prevent copy from being justified. By rechecking once, any error in setting justifier can be eliminated.

TYPING JUSTIFIED COPY

- Type first line of rough copy until bell rings and dial pointer moves up on the dial scale and there are not enough spaces left to type next word. *Example:* If the dial pointer stops on 4 and the next word is "this" there are not enough spaces left to type that word. You need five spaces—one space *before* the word and 4 spaces for the word, so it would be necessary to put the word on the next line.
- Do not space after last word typed on rough copy line. Hitting space bar will move dial pointer over one number on scale, and back spacing will not alter the setting of the dial pointer once it is made.
- Tabulate, *space once*. Check to see if the character scale groove and trolley groove match. If not, space again. Do not proceed to type justified line until these two grooves are in perfect alignment. Repeat line just typed on rough copy. It will stretch to selected column width.
- Continue typing line for line in same manner.
- Do not type after dial pointer reaches zero.
- Do not depend on left marginal stop entirely. Glance at copy to be sure you start each line under preceding line. Do the same on the finished copy.
- On any incomplete line (such as a paragraph ending), tabulate, space, and move dial pointer *manually* to zero. This is the only place where dial pointer may be moved manually—at the starting point of the finished copy. It is not necessary to type the paragraph ending on the rough copy side.
- In the event that you accidentally space after last word on rough copy, there are several ways to correct the dial pointer setting: (1) You may bank carriage and retype line, (2) bank carriage and space across line until ribbon shield pointer is one space beyond last typed character, or (3) tabulate, space, and set dial pointer *manually* at one number higher than reading on the dial.
- After typing rough copy line, glance at it to see if any typographical errors have occurred. If the correct *number* of characters appears in each word, tabulate, space, and retype copy correctly on justified side. If any letters have been omitted, hit space bar enough times to make up for omitted letters, tabulate, space, and type corrected justified line. If too many letters have been typed in the rough copy line, tabulate, space, and adjust dial pointer setting *manually* before typing corrected justified line.
- Since the automatic justifier stretches lines of copy, you can use the text type at a smaller horizontal spacing than is ordinarily recommended for straight copy. For example, a type that usually requires 14 horizontal spacing may be used at 16 spacing if copy is being justified. When the smaller spacing is used, always allow a reasonable amount of stretch on each line. Stop typing rough copy line when dial pointer is somewhere between the highest number and midway position on the dial.
- Many styles of type have two recommended spacings—one when the type is used in lower case copy and a wider spacing if the type is used in all capital letters. If you use such a type in justified copy and have words in the text copy that must be typed in caps, allow enough stretch on the line where these caps occur to give these letters an attrac-

AUTOMATIC JUSTIFICATION

Automatic Method (cont'd)

tively spaced appearance. The type used in this manual requires a wider spacing when an ALL CAP WORD is typed, but by allowing the justifier to stretch the line the capitals are properly spaced.

- Return all parts of the automatic justifier mechanism to normal position when copy is completed.

- On A-11 Model insert tabulator stop at 4.5 on tabulator scale. Insert *right* marginal stop at 4 on marginal scale. This will place end of rough copy 1/2" away from justified copy. The maximum column width that can be obtained by the Automatic Method on the A-11 Model is 3 1/2 inches.

CENTERING HEADINGS

When the automatic justifier is set, headings may be centered and spread simultaneously by following the steps listed below:

1. Bank carriage against left stop.
2. Type heading.
3. Immediately following the heading, tap space bar and *count spaces* until you have counted to an *even* number and the *dial pointer has reached some position on the dial scale*. If the heading type normally requires a wider horizontal spacing than that being used in the text copy, let the dial pointer stop at a *high* number on the scale. If the heading and text type require the same horizontal spacing, let the dial pointer

stop on a low number on the scale (near zero).

4. Tabulate, space once, and space in *one-half* the number to which you counted. This will distribute white space equally on each side of the heading.
5. Type heading. It will be spread the desired amount and automatically centered at the same time.

INDENTATIONS AND RUN-AROUNDS

When a column indentation is required in the copy, it is handled in practically the same way as in the *Dial Pointer Method*.

An indentation or run-around from the *left margin* can be made by merely changing the character scale indicator to agree with the number of characters in the indented column width. *Do not move or change the trolley setting*. When you space in to the new starting point, the character scale and trolley will automatically match.

To obtain an indentation from the *right* or from *both* margins, you must reset the automatic justifier or manually justify the indented copy. If manual justification is used, remember that the dial pointer *must be set at zero* at the starting point of the original column width (before spacing in for indentation). Words can then be half-back spaced on each indented line to justify the indented column width, and when the indentation is completed, just bank the carriage and continue typing copy at original column width.

CENTERING HEADINGS

Copy set on the Vari-Typer has the two elements necessary for modern composition, typography that is suitable and perfectly controlled impression. Various styles of type and sizes ranging from 6 to 18 points are available. Italics are

CENTERING HEADINGS

Copy set on the Vari-Typer has the two elements necessary for modern composition, typography that is suitable and perfectly controlled impression. Various styles of type and sizes ranging from 6 to 18 points are available. Italics are

The above example shows the irregular lines of the rough copy justified in a 3 inch column on the right side of the page. The heading has been stretched to a more attractive spacing and centered over the justified copy.

AUTOMATIC JUSTIFICATION

Automatic Method (cont'd)

JUSTIFIER TEST

Many operators prefer to test the justifier setting before starting to type copy. The justifier test described below may be used to check the justifier setting either before or during the typing operation (in case justifier does not seem to be operating properly).

1. Bank carriage against left marginal stop. Type x's (in groups of 9 x's plus one space) until dial pointer reaches zero on scale. This represents a line with no stretch on the justified side. Repeat the same number of x's on the justified side of the page.

- Example -

3 inch column at 12 characters per inch. Type three groups of 9 x's plus a space and put 6 x's in last group. This should bring dial pointer to zero, if marginal stops are set correctly. Tabulate, space, and repeat the 36 x's on the justified copy side.

2. Bank carriage, type x's in same grouping until dial pointer reaches 1 on scale. Repeat same line on justified copy side.

- Example -

Type 35 x's on rough copy side. Dial pointer should stop on 1. Repeat same line on justified copy. It should stretch to equal line above.

3. Continue same procedure for each line, dropping off 1 x on each successive rough copy line, thus allowing the dial

pointer to stop on a higher number each time until maximum or highest dial setting has been reached.

- Example -

Succeeding lines will have:

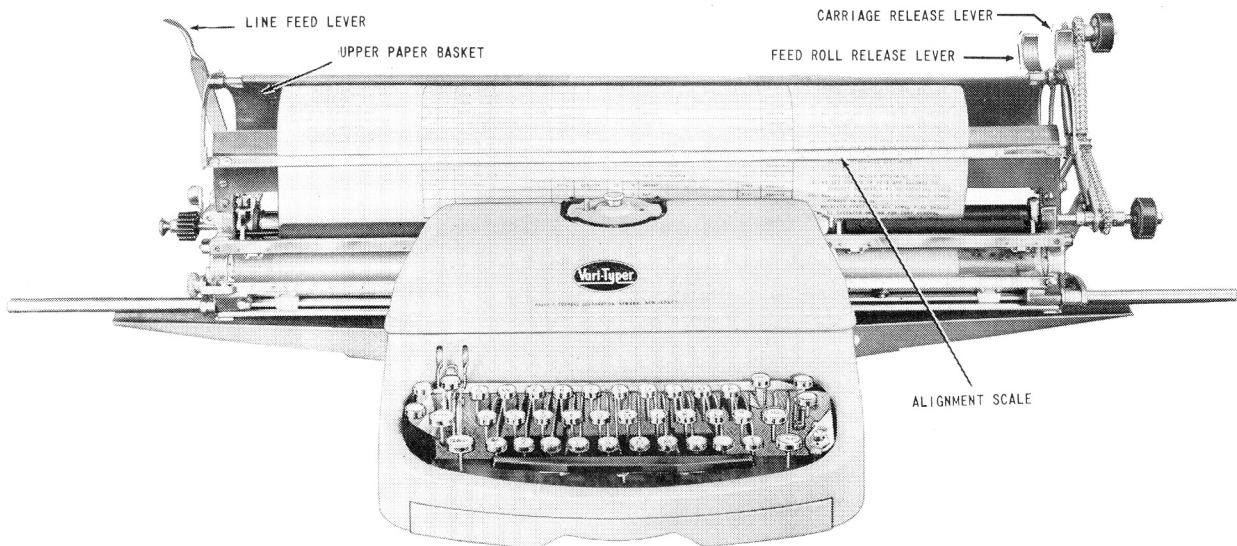
No. of x's	Dial Setting
34	2
33	3
32	4
31	5
30	6
29	7

4. Each of the rough copy lines, when repeated on the justified side, should equal the first line typed. If one or two of the lines are a full character off, the dial pointer adjuster knob was improperly set when justifier settings were made. Recheck this part of the setting and run a new justifier test. Any other slight variations (not full characters) are usually due to inaccurate setting of the character scale indicator and/or the matching of the trolley to the indicator. Adjust these and run a new justifier test.
5. A quick justifier test may be made by typing the longest and the shortest lines of the justified copy (that is, the line which has a zero dial pointer setting and the one which has the highest dial pointer setting for the spacing used). However, such a test does not always show discrepancies on intermediate settings between zero and the highest number.

<pre> 0 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxx 1 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxx 2 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxx 3 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxx 4 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xx 5 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx x 6 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx 7 xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx </pre>	<pre> xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx x xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx xxxxxxxxx xxxxxxxxxxx xxxxxxxxxxx </pre>
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This justifier test shows a 3 inch column at 12 spacing, 36 characters wide. The dial pointer settings are shown at the beginning of each rough copy line to illustrate how the settings increase as each line decreases in length.

ENGINEERING MODEL



The Engineering Model (E-24) *Vari-Typer* is designed especially for composing copy on engineering tracings or drawings. Bills of material, specifications, explanatory notes can all be typed on the drawings, freeing the draftsmen who usually hand-letter these items for more important work. In addition, this model may be used for all other types of composition such as photo-offset, stencil, etc. It has the same keyboard arrangement and basic operational settings as other non-justifying models plus certain additional features which aid in handling large drawings or tracings.

Carriage. The carriage of the Engineering Model is 24" long, and the machine provides a continuous writing line of 23.1 inches. Like all other *Vari-Typers*, the Engineering Model has an open-end carriage so that the carriage size does not limit the size of drawing that may be inserted in the machine. Drawings as wide as 12 feet (or even wider) may be placed in the Engineering Model carriage.

Upper Paper Basket. At the top of the carriage is a large tray or basket that extends the full length of the carriage. This basket supports the upper portion of the drawing or tracing during the typing operation.

Extended Levers. The Carriage Release Lever, Line Feed Lever, and Feed Roll Release Lever are extended so that they appear above the upper paper basket within easy reach when a large tracing is in the machine.

Marginal Stops. The marginal stops on this model, both left and right, are removable so that they can be placed in any position on the marginal scale. To insert either stop on the scale, hook the bottom part of the stop under the scale, squeeze the two levers of the stop together *slightly*, and hook upper part of stop over scale. To move stop along scale, squeeze two levers of stop together and slide along scale until marginal stop indicator rests on desired position. Test stop by pressing against flat side of prong that extends below stop.

Alignment Scale. The alignment scale is attached to the top of the upper paper basket. Use the scale to straighten the drawing when it is first inserted in carriage, and leave scale *down* during the typing operation. It will help to control the upper portion of the drawing and guide the drawing into the upper basket.

Ribbons. Both carbon and fabric ribbons may be used on the Engineering Model. The type of

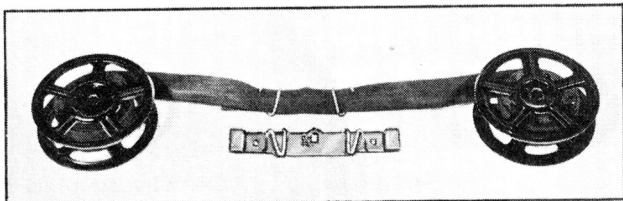
ENGINEERING MODEL (cont'd)

tracing material (tracing paper or tracing cloth) determines the type of ribbon that should be used. If you are typing on tracing cloth (linen tracing), you must use a cloth ribbon. On tracing paper (vellum) either a cloth or carbon ribbon may be used, but a carbon ribbon is usually preferred. On any kind of tracing material it is essential that the copy be *opaque*, so that light will not penetrate the copy when it is reproduced.

CLOTH RIBBON INSERTION

All standard model *Vari-Typers* (except M models) have two cloth ribbon cups, one on each side of the anvil. One cup contains an empty ribbon spool, and both cups have a thumbscrew knob at top of center spindle.

Remove the knobs from both cups. Attach hook on end of cloth ribbon spool to center of empty spool. Turn empty spool by hand one or two revolutions. Place two spools on desk about 6" apart, with full spool at left and empty spool at right. When both spools are in ribbon cups, they will be moving in a *clockwise* direction. Be sure that ribbon is feeding from full to empty spool in such a manner that these spools will move clockwise.



Insert ribbon into shield. The cloth ribbon shield (6AS127) has a wire guide on each side of the shield window. The top of the wire curves downward slightly and is called the *retainer wire*. The longer portion of the wire (nearest the shield window) is the *guide wire*. Hold the shield as it will appear on machine, with shield pointer *up* and guide wires facing you. Hook the cloth ribbon under left retainer wire, then under two long guide wires, and finally under the right retainer wire.

Lift this entire assembly and place in the machine. Put full ribbon spool in left cup and empty one in right cup. Before inserting ribbon shield on holder, move holder control lever to the left (as in carbon ribbon insertion). Place shield on holder by dropping

each shield loop on holder prongs. Press the shield all the way down on holder. Then move holder control lever slightly to the right.

The ribbon control knob at right side of the machine (below space shift lever) controls the direction of the cloth ribbon movement. When the control knob is *in*, the ribbon moves from *left to right*. When the knob is *out*, the ribbon moves from *right to left*. The ribbon movement reverses automatically when all of the ribbon has been transferred from one spool to the other.

Many operators prefer to rotate two or three ribbons. As soon as the ribbon has been used through one winding (and is ready to reverse direction), remove the spool and wrap it in the aluminum foil in which it was originally packed. While the second and third ribbon are being used, the first ribbon will be re-inked and as fresh as a new ribbon. Two or three ribbons, rotated in this manner, will last far longer than the same number of ribbons when not rotated in use.

TRACING INSERTION

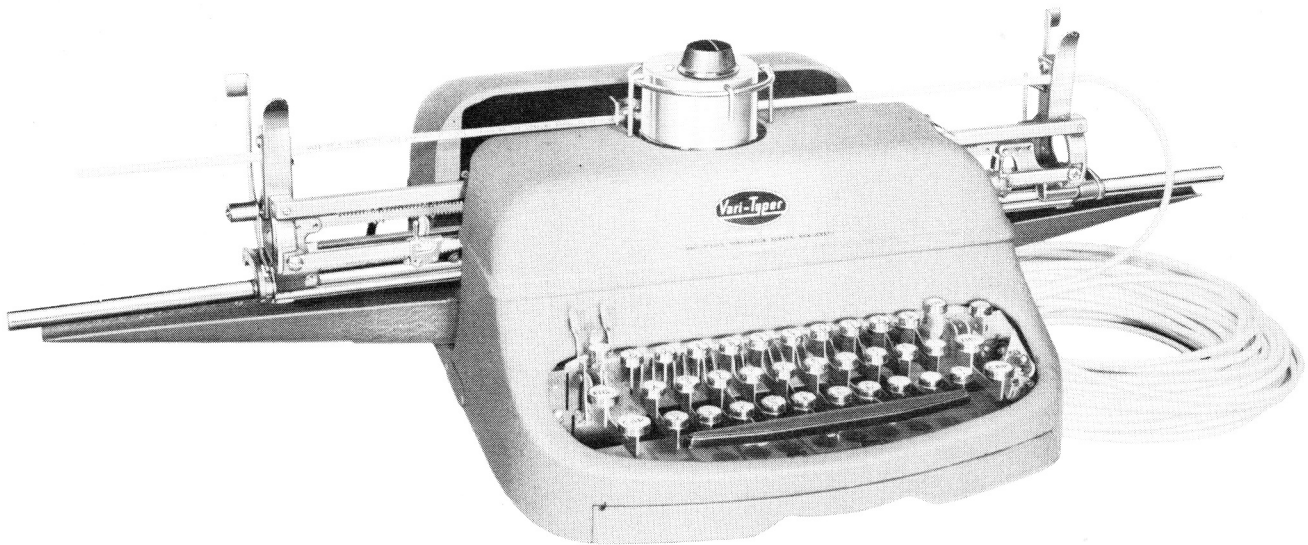
Small tracings are inserted into the *Vari-Typer* in the same manner as other masters, using the split wooden roller to hold and to control the tracing in the lower paper basket.

Two poles, longer than the ordinary split roller, are usually required to handle large drawings or tracings.

Fasten the bottom edge of the tracing to one pole, using Scotch tape or similar adhesive at intervals about 12" apart. Roll the tracing around the pole with the writing surface (dull side) in and insert in lower paper basket. As the tracing moves up in feed rolls during the typing operation, the top edge will reach the upper basket. Fasten the second pole to the top edge of the tracing and place pole in upper paper basket so that tracing moves in a counter-clockwise direction.

Extremely large tracings, over 6 feet in width, require additional support for the portions of the tracing that extend beyond the ends of the carriage. Stanchions are available to provide the necessary support of large tracings.

VARI-TYPER BRANDING MACHINE



The *Vari-Typer Branding Machine* is a specialized development of the *Vari-Typer* principle, designed to make permanent brands on *Vinyl Tubings*. The features of changeable type and changeable horizontal spacing permit the use of a wide range of type styles and sizes. Heat is applied to the type which, in combination with a powerful hammer stroke, creates a sharp, clear image. This assures a permanent marking on the *vinylite* highly resistant to removal.

Because each identification is individually typed, the machine is ideally suited for small lots of varying identification. Even large quantities of similar numbers can be obtained at surprising speed once the operator has become familiar with the machine.

ELECTRIC CURRENT

Electric current is used to heat the anvil and type through the anvil heating unit. *Only 110 volts a/c is to be used.* This heating unit is designed for long periods of continuous operation and requires 20 minutes to reach operating heat.

Absolute control of the temperature is provided by a thermostat (the control knob of the thermostat is located on top of the anvil). This insures proper operating temperature regardless of the length of time the heating unit is left on or the speed with which the operator types. It is suggested, however, that the unit be turned off whenever the machine is idle for periods of an hour or more.

The second use of the electric current is to actuate the *Rotary Solenoid*. This solenoid delivers a powerful rotary stroke and will withstand many millions of cycles of operation. This rotary movement is transmitted through a cam and roller to produce a powerful and firm hammer impression. The solenoid action, in combination with heat, creates a lasting brand.

On shielded machines, the plug should be removed whenever operations are suspended for an hour or more to insure long life of the filter which has been installed to prevent interference with electronic equipment. *Caution: When removing the plug, touch the grounding clip to each blade of the plug.*

VARI-TYPER BRANDING MACHINE (cont'd)

TYPE INSERTION

Types are inserted in a manner similar to that used on other *Vari-Typer* models. Keep in mind, however, that if the machine has been operating, the anvil and type will be too hot to touch. Small tongs are provided for handling the type when it is hot. Grasp type with tongs when inserting or removing type from anvil.

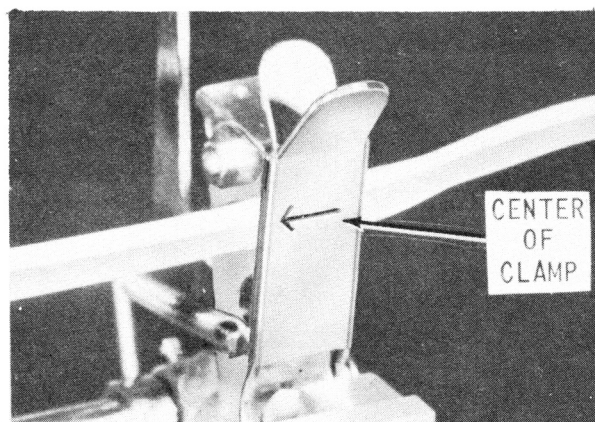
Lock type change key. This will elevate anvil for type insertion. Instead of inserting type on side of anvil facing you, insert it on side of anvil *facing tubing* (printing position). Hold type in tongs, *nub* down, and insert type into anvil so that type eyelet enters wide slot at dot marking on anvil. (Center line of type lines up with dot marking.)

Slide type font in anvil slot until center line of type lines up with center line of the anvil. Release type change key and anvil will drop into position.

Never attempt to rotate anvil. To remove type, simply depress type change key, use tongs to remove type from its operating position, and replace with new type. The rear of the anvil may be used to hold a second type for warming-up purposes. When you are ready to use second type, remove it from its reserve position and insert it into *printing position* of anvil. Since the new type is already warmed to operating temperature, it may be used immediately without waiting three or four minutes for the type to heat to correct temperature.

TUBING INSERTION

Vinylite tubing in sizes ranging from 1/8" to 3/8" in diameter can be handled by the *Vari-Typer Branding Machine*. Usually, the tubing used comes in coils. It can be branded in long continuous strips to prevent the loss of individual markings. The *vinylite* tubing clamps are located at each end of the carriage. To clamp the tubing in position, open the clamp, insert the tubing at the groove on the left clamp. (Regardless of the size of the tubing used, the groove should indicate the center.) This assures typing in the center of the tubing. Then clamp the tubing at the right end in the same manner. Stretch the tubing about an inch or two between clamps to eliminate twisting while typing. If too much stretching



is applied, the tubing will slide through the fixture until proper tension is attained. The tubing should pass through the guides between the hammer and the anvil of the machine. When the machine is left standing, it is suggested that the tubing be removed from the guides and allowed to rest behind them. Thus, the tubing will not be softened from the anvil heat.

IMPRESSION

The impression of the *Vari-Typer Branding Machine*, like that on other *Vari-Typer* models, is uniform for each blow. The powerful action of the *Solenoid* increases the force of the blow and maintains constant pressure against the heated type as long as the key is depressed. The density and depth of the characters are varied in accordance with the length of time the key is held down. In operation in a normally heated room, a quick stroke of the key and immediate release is sufficient to create a satisfactory brand. In colder temperatures, it may be necessary to operate the anvil at a higher temperature. To do this, merely turn the thermostat adjusting knob to the right, wait for the anvil to reach its new operating temperature, and a dark brand will be obtained with a quick stroke of the key. The actual brand should be below the surface of the tubing and should not rub off with very heavy pressure of the finger. If the brand is not sufficiently deep or indelible, more heat may yet be required and the operating temperature should be increased still further. If the machine does not heat sufficiently or if the *Rotary Solenoid* does not operate with a quick, firm stroke, the electric supply should be checked to assure that 110 volt requirements

VARI-TYPER BRANDING MACHINE (cont'd)

are being maintained. A few practice strokes will be sufficient to ascertain the correct typing speed and temperature to be used. The faster the typing speed, the higher the temperature required.

HORIZONTAL SPACING

The horizontal spacing used in most instances is 10 or 12 characters per inch. However, on small tubings and in cases where identification numbers are lengthy, smaller spacings may be utilized to obtain condensation. In this way, as many as 16 characters can be placed on a one-inch length of tubing.

TABULATOR STOPS

When your *Branding Machine* is delivered, all of its tabulator stops are set one inch apart. The use of the tabulator key permits uniform spacing of the markings so that the tubing may be cut in any desired size, thereby speeding the marking operation.

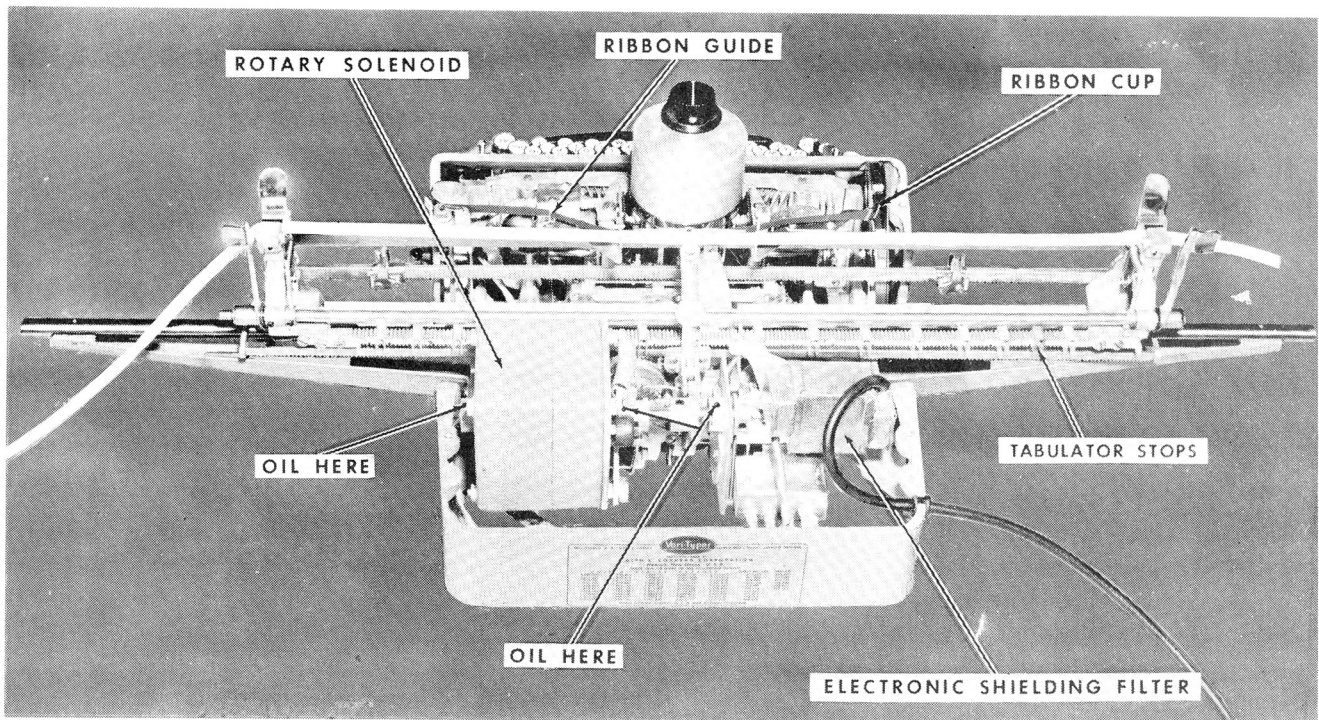
SUGGESTED TYPES

A large variety of *Vari-Typer* faces may be used on the *Branding Machine*. Gothic (sans-

serif) styles are recommended for the best results. Bold Gothics 270 and 180L Bold and Medium Gothics 350 Nos. 4 and 5 are particularly good for branding work. The 350 types have two sizes of caps on each font, providing a wide and easily changeable variety of letters. The figures on these types correspond in height to the capital letters. The Blueprint Type, No. 276, is also recommended, as the location of the capital and figure rows is changed on this type, eliminating some of the shifting operations.

MAINTENANCE

No adjusting by the operator is necessary to keep your *Vari-Typer Branding Machine* in operating condition. However, it is necessary to oil the bearings on the *Rotary Solenoid* and its associated bearing bracket. A drop or two of oil should be applied to these three points once a week while the machine is in operation. No oil is required at any other points in the machine, but certain items must be kept clean to insure smooth operation. The types, anvil, and shield should be cleaned with denatured alcohol as described in this manual under "*Care of the Vari-Typer.*"



ATTACHMENTS

Forms Ruling

The Forms Ruling Attachment is a device for ruling a variety of horizontal and vertical lines and producing vertically justified leaders. It can be used to produce forms complete with typography and lines, ready for reproduction. This attachment can be put on any *Vari-Typer* model except the *Vari-Typer Branding Machine*.

There are four basic parts in the Forms Ruling Attachment - the type, control switch, forms planning scale, and line or cut-off stops.

Type. The type is the regular standard type with three characters added on a segment in the center section of the type. All of the other characters remain intact. Single lines of varying widths, scotch lines, double lines, dash leaders, period leaders, and many others are available on different segments. The segments are shown below and are called *Segment I*, *Segment II*, etc. When ordering forms types, always specify the segment desired on each type font.

The top segment character is obtained by simply pressing the control switch; the middle segment character, by locking the capital shift key and pressing the control switch; the bottom segment character, by locking the figure shift key and pressing the control switch.



Forms Ruling Attachment showing Control Switch

No key of the keyboard is used. The type remains stationary when composing rules and leaders. In this way, precise alignment and accuracy are maintained for every forms character.

Control Switch. The only control used in the operation of the Forms Ruling Attachment is the toggle-switch located on the small control box at the right of the machine. By holding the switch to the *left*, you can obtain the automatic, rapid impressions which form a continuous ruled line. Push the switch to the *right* to obtain single impressions of the segment character.

Forms Scale. On the paper table is a tubular scale calibrated in inches and in each of the four standard spacings. By merely turning the knob at the end of the scale, any selected scale becomes visible. This scale acts as a

ACTUAL SIZE

I		II		III		IV		V		VI		VII		VIII		IX		X	
I		II		III		IV		V											
L.C.		Dot leaders		Hyphen Leaders		1/2 point Rule		Hairline		Dot Leaders									
CAP		Hairline		Hairline		1 point Rule		Scotch Rule		Hairline									
FIG		Parallel Rule		Parallel Rule		2 point Rule		Scotch Rule		Blank (for tabulating)									
ARMY AND AIR FORCE FORMS										NAVY FORMS									
VI		VII		VIII		IX		X											
L.C.		Hairline		Hairline		Dot Leader		Dot Leader		Dot Leaders									
CAP		1/2 point Rule		1/2 point Rule		Dot Leader		Hairline		Dot Leaders									
FIG		1 1/2 point Rule		1 point Rule		Dpt Leader		Parallel Rule		Dot Leaders									

ATTACHMENTS (cont'd)

Forms Ruling

plotting device for determining the starting and stopping points of ruled lines.

Attached to the front cover and near the anvil is the *forms scale pointer*. As the carriage moves during the typing operation, this pointer moves along the tubular scale, indicating the amount of space the carriage has traveled. The pointer may be moved back, away from the scale, when not in use.

Line Cut-off Stops. Cut-off stops are provided to control the length of lines *automatically*.

A cut-off stop is a thumb-screw clamp which fits over the marginal scale at any desired position. A small projection on the stop causes the carriage to stop at the required position when the *automatic* ruling switch is pressed. It does not affect the travel of the carriage for other typing. These stops are useful whenever many lines of the same length are being ruled. To continue a line beyond the cut-off stop, press the control switch to the right two or three times, and then press switch to left to get automatic, continuous line.

Card Holding Attachment

The Card Holding Attachment is a device which may be installed on the *Vari-Typer* for use with *Remington-Rand Flexo-Print*, *Acme Visible*

Records, or other similar systems. For detailed information on this attachment, contact the *Vari-Typer* Branch Office nearest you.

Mathematical Attachment

The Mathematical Attachment changes the shift arrangement on the keyboard so that *four-row* types may be used. The *Cap* and *Fig* shifts on the *left* end of the keyboard operate in the usual manner. The shift keys on the *right* end of the keyboard are marked "NUM" and "DEN" to designate "Numerator" and "Denominator" shift keys. The *denominator* shift is used for the fourth row of characters on a four-row type.

All of the four-row types have a series of small numerals which may be used as either *superior* (exponent) figures or as *inferior* (subscript) figures in mathematical formulas. If the numeral is to be used as an inferior, or subscript, figure, use the *denominator* shift key. If the numeral is to be used as a superior, or exponent, figure, use the *numerator* shift key. The numerator shift simply

places the numerals in a higher position on the page.

The numerator and denominator shifts are controlled by a lock lever located directly behind these two shift keys. When the lever is pushed to the *left*, the denominator and numerator keys operate as ordinary Cap and Fig shifts. Push the lever to the *right* when using four-row mathematical types.

The Mathematical Attachment can be placed on any standard model *Vari-Typer*.

KEYBOARD TYPING CHART

A keyboard chart is available for use with each mathematical type or any type font with characters other than those indicated on the standard keyboard.

MATHEMATICAL No. 135C

qazwsxedcrfvtgbyhnujmik,ol.p.v
QAZWSXEDCRFVTGBYHNUJMIK?OL@P:~
1"_2X3A+4~[5~]6÷v7'μ8(<9)>0=/
₁αζ₂σξ₃δρ₄ψθ₅γβ₆ητ₇εφ₈κω₉λπ₀π-

Here are two samples
of four-row
mathematical types.
Others are shown
in type catalog.

MATHEMATICAL No. 204

qazwsxedcrfvtgbyhnujmik,ol.p.-
QAZWSXEDCRFVTGBYHNUJMIK?OL@P~
1"_2||x3≡+4~[5~]6{*7'|8(<9)>}=/
1az2⊥xs∇y4⋯→5x68h7jmskto-+0≈✓

CARE OF THE VARI-TYPER

The care given any machine or mechanical device will have a direct effect on the quality of work it produces. The *Vari-Typer* mechanism is no more sensitive than other precision-built office machines, but, like all others, requires specific methods of cleaning and care.

There are eight parts of the *Vari-Typer* which should be cleaned *daily* to insure proper operation of the machine. The best time to clean the machine is in the morning before starting the day's work. The entire cleaning procedure can be accomplished in less than five minutes and is well worth the time, for a clean machine will give you clean and attractive copy.

The eight parts to be cleaned can be easily remembered if grouped in pairs as in the following list:

- (1) Feed rolls and paper basket
- (2) Alignment *scale* and alignment *guides*
- (3) Types and anvil
- (4) Ribbon shield and carbon ribbon feed

The best cleaning fluid for the *Vari-Typer* is *denatured alcohol*. This is the fluid that should be used for the best results. If it is impossible to obtain denatured alcohol, carbon tetrachloride may be substituted. *No other cleaning agent should be used.*

FEED ROLLS AND BASKET

When the machine is not in use, the feed rolls should be left open. They should be cleaned *daily*, or more frequently when stencils are being typed. Do not leave the stencil in the feed rolls any longer than necessary to complete typing of copy. If feed rolls are not cleaned frequently, the rolls may become glossy or shiny thus causing the paper to slip during the typing operation. Close the feed rolls and rub them with a soft cloth that has been dampened with alcohol. Turn the rolls as you rub them to make sure that all parts of the rolls are thoroughly cleaned. Rub the rolls until they have a dull finish (as all new feed rolls do) and be sure the rolls are completely dry before inserting master copy into machine.

Clean basket by using the split roller with a piece of cloth wrapped around the end. Slide roller through the basket as many times as necessary to remove all dust and carbon particles.

ALIGNMENT SCALE AND ALIGNMENT GUIDES

Dampen the cleaning cloth slightly with alcohol and rub the back of the alignment scale. Reach behind paper table and run cloth along the alignment guides. Remember that any part of the *Vari-Typer* that touches the paper or master sheet *must* be kept perfectly clean.

TYPES AND ANVIL

Type fonts should be cleaned before or after use. It is best to clean the type font just after it is used, for then it is ready to use immediately at any future time. The *back* of the type collects the most dirt. Using a cloth that has been dampened with alcohol, rub the back of the type *thoroughly*. This is the side of the type that comes in contact with the anvil, and failure to keep it clean will slow down the typing action. When the type is used with a carbon ribbon, the face of the type remains fairly clean, but if a cloth (inked) ribbon is used, or if the type is used on stencils, ink or stencil wax will accumulate on the face of the type. To clean the front of the type, dip the *type brush* in denatured alcohol and brush the surface of the type briskly. Dry the type immediately with a dry cloth. *Never soak types in alcohol or other cleaning agent.*

The anvil slot must be cleaned daily. Fold a stiff paper or card and run it back and forth in the anvil slot. Be sure to clean well around both sides. A drop of alcohol on the paper will remove the carbon more easily. If you use alcohol, always repeat the cleaning operation with a dry piece of paper. The outside of the anvil may be wiped with a clean cloth; if necessary, use alcohol on the cloth. It is important that the anvil and types be immaculate to facilitate the movement of the type in the anvil. A carbon accumulation may cause the type to "stick" (fail to return to center after a character has been typed). If this occurs, the first remedy is to clean both the anvil and the type. Also try the type on the opposite side of the anvil.

Care should be exercised when replacing types in type drawer. Always be sure the type is straight in the slot provided for it. Careless handling may result in a bent web on the type -another cause of type "sticking."

CARE OF THE VARI-TYPER (cont'd)

If a type continues to "stick" after anvil and types have been cleaned, contact the nearest service representative. *Do not attempt to bend or adjust the type yourself.*

RIBBON SHIELD AND CARBON RIBBON FEED

Remove the ribbon shield from shield holder and rub both sides with cloth that has been dampened with alcohol. Always be sure that the ribbon shield is adjusted properly on the shield holder each time the ribbon shield is replaced on the holder. An improperly set shield may cause damage and call for too frequent replacement. The shield is usually replaced when it becomes damaged around the hole or *window*. Damage at this point may cause frequent ribbon breakage, shield marks around letters, or carbon flaking on copy.

As the carbon ribbon passes through the wheels of the ribbon feed, it may flake and fill in the grooves of the wheels. If this carbon is allowed to accumulate, the wheels of the ribbon feed will no longer effectively grip the ribbon, and the accumulated carbon may flake onto the master copy. To prevent this carbon accumulation clean the wheels daily with the type brush. A dry brush will usually clean the wheels sufficiently. Occasionally you may wish to clean the wheels more thoroughly by dipping the brush in alcohol before brushing the wheels. If alcohol is used, be sure to dry the wheels thoroughly with a dry cloth. When cleaning the wheels, fold a piece of paper and hold it under the wheels to prevent any carbon specks from dropping into the mechanism of the *Vari-Typer*.

WHEN MACHINE IS NOT IN USE

A few simple rules in the proper care of the *Vari-Typer* will enable you to obtain maximum efficiency in the use of the machine. These rules are designed to reduce the tension on springs and other parts of the machine when it is not in use:

1. Leave the feed rolls open. Do not leave a stencil or plate in the machine overnight or for any long period of time.
2. Set space shift lever at smallest spacing (16 on M, A, and F models; 18 on AE or FE models).

3. Set impression lever at 1.
4. Remove types and allow anvil to drop back into place. (Release type change key.)
5. Place cover over machine.

ELECTRIC CURRENT

Most *Vari-Typer* models are equipped with a Universal 110-volt motor, which will operate on AC or DC current. For 220-volt current a 220-volt motor must be used.

Any *Vari-Typer* having a Forms Ruling Attachment will operate only on 110-volt, 60 cycle, AC current. A converter is required if such a machine is to be used with DC current. If this model is used with 220-volt, 60 cycle, AC current, a transformer must be used.

The *Vari-Typer Branding Machine* also requires 110-volt AC current (50 or 60 cycle).

When a *Vari-Typer* is to be used near electronic equipment, the motor may be shielded to eliminate interference with other equipment.

The *Vari-Typer* does not use electric current constantly (except when the Forms Ruling Attachment or the *Vari-Typer Branding Machine* is in operation). While typing you will hear a slight "whirring" sound after every 19 strokes on the keyboard. This sound is the winding of a tension spring that gives the machine mechanical power for the next 19 strokes. Thus, *electrical* power is used only at intervals during the typing process.

Always be sure that the machine is plugged in when you begin to type. If the machine happens to be disconnected when you start to type, you may be able to type several characters before noticing any difference in operation. When the mechanical power is exhausted, the machine will stop. If this happens, always check to see if machine is plugged into an electric outlet. One quick way to check this is to turn on the shadow light. If it lights, you know the machine is being supplied with electric current. If it does not light, check to see if plug is in electric outlet and also check the outlet to be sure it is supplying electric current. (Check the outlet by plugging another electric device, such as a lamp, into the same outlet to see if it works in that outlet.)

CARE OF THE VARI-TYPER (cont'd)

O P E R A T I O N C H E C K L I S T	
PROBLEM	SOLUTION
1. <i>If machine stops during typing operation:</i>	1. Check to see if machine is plugged in.
2. <i>If letters appear too crowded:</i>	2. Check to see if horizontal spacing lever is set at correct spacing for the type.
3. <i>If copy is too light -</i>	3. Set impression lever to heavier impression setting. Check ribbon. Be sure it is moving through machine. (Ribbon control knob must be in.)
4. <i>If type sticks in anvil (does not return to center after a letter is struck) -</i>	4. Clean outside of anvil and anvil slot. Clean back of type.
5. <i>If space lever does not move easily (on Automatic Justifier Model) -</i>	5. Move dial pointer <i>all the way to the right</i> . (See note on machine.)
6. <i>If feed rolls appear shiny or glossy -</i>	6. This is usually a result of improper cleaning, especially after typing stencils. Clean feed rolls <i>thoroughly</i> with cloth dampened with denatured alcohol. <i>Rub well</i> until rolls show a dull finish.
7. <i>If paper slips in feed rolls -</i>	7. Clean feed rolls thoroughly. If paper continues to slip, have rolls adjusted by service representative.
8. <i>If plates slip in feed rolls -</i>	8. Some plates slip in rolls more easily than others. Apply a <i>narrow</i> strip of draftsman's masking tape to the <i>back</i> of each vertical edge of plate. Do not put tape in typing area of plate.
9. <i>If machine does not justify, when using Dial Pointer Method of justification -</i>	9. Check character scale setting and be sure character scale and trolley are matched at starting point of copy.
10. <i>If machine does not justify, when using Automatic Method of justification -</i>	10. Check all steps of justifier setting. Use justifier test on Page 26.
11. <i>If ruled lines do not join when using forms ruling attachment -</i>	11. Check horizontal spacing lever to see if it is set at correct spacing for segment type being used.

TYPE SELECTION

There are four major factors in the selection of types for *Vari-Typer* composition. Each must be given full consideration in order to achieve the best results in the finished job. These factors are listed below in the order of their importance:

1. *Method of reproduction to be used.* Some types reproduce better by one duplicating process than by others. However, types designed primarily for one kind of reproduction may also be used for titles and special effects on other duplicating masters.
2. *The area of the final composition.* If the size of the reproduced copy is to be small, small types will usually be best. If the reproduced copy is to be large, larger types and wider spacings may be necessary.
3. *The amount of typed matter to be placed in the composition area.* If a large amount of copy must be placed in a given area, a smaller type must be used. Learn to balance the copy and white space in the copy area. Neither small types with too much white space nor large types with little white space is desirable.
4. *The desired "style" effect.* This depends upon the purpose of the work and the nature of the composition.

Type selection can be greatly simplified by first determining the basic style of the type to be used. Types may be classified as follows:

1. **GOTHIC**
 - a. Light line
 - b. Medium face
 - c. Bold face
2. **ROMAN**
 - a. Print face
 - b. Typewriter face
3. **ITALIC**
 - a. Gothic *Slant*
 - b. Roman *Italic*

Gothic types are perfectly plain, consisting of just enough strokes to form the letter. *Roman* types have additional, decorative lines

added to the basic strokes of the letter. These extra lines are called *serifs*. A Roman type could thus be called a *serif type*; a Gothic, a *sans-serif* style.

T	T
GOTHIC	ROMAN

Bold Gothic styles have heavy, black lines; *Medium Gothics* have medium-weight lines; and the lines of *Light Line Gothics* are thin and sharp.

THIS IS A BOLD GOTHIC TYPE.

THIS IS A MEDIUM GOTHIC TYPE.

THIS IS A LIGHT LINE GOTHIC TYPE.

Roman Typewriter styles are patterned after standard typewriter faces and have letter strokes that are uniformly thin or sharp. The *Roman Print* styles more closely resemble printing and have letter strokes which are shaded (vary in thickness).

TYPEWRITER

This is a typewriter face.

This is a typewriter face.

PRINT

This is a print face type.

This is a print face type.

Italic types are slanted and may be either *Gothic Slant* (sans-serif) or *Roman Italic* (with serifs).

THIS IS A GOTHIC SLANT

THIS IS A ROMAN ITALIC

The most frequently used *Vari-Typer* types are listed on the next page, they are grouped, for easy identification, according to basic type classifications.

TYPE SELECTION (cont'd)

GOTHIC (SANS-SERIF) TYPES (listed in order of size in each group)

BOLD	MEDIUM	LIGHT
295 AND 295A	292	96
434-14	434	27 27E 27P
229	350 SERIES	226
270 AND 270SP	(#6, 5, 4, 3, 2)	180L
180LB		180

ROMAN PRINT - SERIES

NAME	STYLE NUMBER	ITALIC*	POINT SIZES
CASLON	300	-	12-11-10-9-8
LITHO-BOOK	310	-	12-10-8-6
ALEXANDRIA	320	325	12-10-9-8
LITHO-NEWS	360	-	12-10-8-6
TRIBUNE NEWS	361	-	11-9-7½-6¾
TRIBUNE NEWS BOLD	362	-	9-7½
BODONI BOOK	380	385	12-10-8-7
BODONI BOLD	382	-	12
PRESIDENT	250	-	12-10-9-8-7-6

*Italic specially designed to match series. For series having no matching italic, use one of italics on bottom table.

OTHER ROMAN PRINT AND TYPEWRITER (listed in order of size in each group)

ROMAN PRINT	ROMAN TYPEWRITER
321	25
170	23B & 145
271	24 & 260-9
224	232
330-10	233-7
225-8	158, 158LL
224-7	233
301-6	

GOTHIC SLANT AND ROMAN ITALIC (listed in order of size in each group)

GOTHIC SLANT	ROMAN ITALIC
97B & 97 BOLD	169
345 SERIES	68
(12-10-8)	211

The proper use of a type is dependent, to a large extent, on the basic classification of the type. Here are some suggested uses for types in the various classifications:

1. **GOTHIC STYLE - Bold and MEDIUM.**
These styles are best for:
 - a. Headings and subheadings
 - b. Lettering on tracings
 - c. Emphasis within copy

2. **GOTHIC STYLE - MEDIUM and Light**
are adaptable to:
 - a. Forms
 - b. Tabular or statistical copy

Gothic styles are not recommended for lengthy, text material.

3. **ROMAN PRINT and ROMAN TYPEWRITER** faces are easy to read and, hence, are good styles for text copy.
 - a. Print styles are most popular for offset copy.
 - b. Typewriter faces, because they are sharp, are best for stencil text copy.

4. *Gothic Slants and Roman Italics* are best for special effects:
 - a. Book and magazine titles
 - b. Date, salutation, or complimentary close of letters.
 - c. Emphasis on phrases.
 - d. *Gothic Slants* are suitable for lettering on tracings.

Italics should be used sparingly, or they lose their effectiveness.

To thoroughly acquaint yourself with available type styles, use the table on this page in conjunction with the Type Catalog. The catalog also shows additional types with special symbols or applications.

Because there are many Roman Print styles designed in series (several sizes in the same style), those types are listed separately. On other tables types are listed in order of size, from largest to smallest, in each group.

